

NOMINATIONS—JUNE

HEARINGS

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

NINETY-EIGHTH CONGRESS

SECOND SESSION

ON

JUNE 5, 1984

NOMINATIONS OF DR. BERNADINE H. BULKLEY AND DR. JOHN P. McTAGUE, TO BE ASSOCIATE DIRECTORS, OFFICE OF SCIENCE AND TECHNOLOGY POLICY; AND CLYDE A. BRAGDON, FIRE ADMINISTRATOR, U.S. FIRE ADMINISTRATION, FEDERAL EMERGENCY MANAGEMENT AGENCY

JUNE 7, 1984

NOMINATION OF JAMES H. QUELLO, TO BE A MEMBER OF THE
FEDERAL COMMUNICATIONS COMMISSION

Serial No. 98-97

Printed for the use of the Committee on Commerce, Science, and Transportation



U.S. GOVERNMENT PRINTING OFFICE

36-289 O

WASHINGTON : 1984

5261-61

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NOMINATIONS—OSTP AND FEMA

TUESDAY, JUNE 5, 1984

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The committee met, pursuant to notice, at 9:31 a.m., in room SR-253, Russell Senate Office Building, Hon. Slate Gorton presiding.

Staff members assigned to these hearings: Marguerite Ayers, professional staff member; Cheryl Coodley, staff counsel; Loretta Dunn, minority staff counsel; and Pat Windham, minority professional staff member.

OPENING STATEMENT BY SENATOR GORTON

Senator GORTON. Good morning.

Today's confirmation hearings cover the nominations of Drs. Bernadine Bulkley as Associate Director of the Office of Science and Technology Policy, and John McTague as Associate Director of the Office of Science and Technology Policy; and Mr. Clyde Bragdon to be Administrator of the U.S. Fire Administration.

The Office of Science and Technology Policy was established within the Executive Office of the President of the National Science and Technology Organization and Priorities Act of 1976. The office serves as a source of scientific, engineering, and technological advice and recommendations for the President with respect to policies and programs of the Federal Government. OSTP advises the President of scientific and technological considerations in areas involving the economy, national security, health, foreign relations, and the environment, provides advice and assistance to the President, to OMB, and to Federal agencies, and assists the President in setting priorities and directions in research and development in Federal Government agencies.

Under Dr. Jay Keyworth's able leadership, OSTP has assumed an increasingly important role in setting priorities and directions for our Nation's science and technology research effort.

For this reason, I consider the nominations of Dr. McTague and Dr. Bulkley as Associate Directors of OSTP to be very important, and I am interested in hearing their ideas on a number of different areas of science and technology policy.

Our third nomination this morning is that of Mr. Clyde Bragdon as Administrator of the U.S. Fire Administration. Mr. Bragdon, I am particularly delighted that you have been named as Administrator because I have been concerned about the length of time in which that position has been unfilled. The U.S. Fire Administra-

tion needs the leadership which only an appointed administrator can provide.

As I am sure you well know, the United States continues to lead the industrialized world in loss of life and property due to fire. The U.S. Fire Administration serves as the focus of federal fire prevention and control activities, and for that reason its administrator is a leader in the Nation in combating this serious problem.

Mr. Bragdon, I will be interested in hearing your ideas about priorities for the U.S. Fire Administration and in sharing with you some of the concerns which the fire service community has shared with this committee about the effective management of the problem.

I understand that Senator Mathias is here to introduce Dr. Bulkley, and that Senator Wilson is here to introduce Dr. McTague and Mr. Bragdon, and they are welcome.

Senator Mathias, we will be delighted to hear from you. We do have a statement of Senator Tribble on the subject of Dr. McTague, and that will be included in the record without objection.

STATEMENT OF HON. CHARLES McC. MATHIAS, JR., U.S. SENATOR FROM MARYLAND

Senator MATHIAS. Mr. Chairman, it is with very great pleasure that I introduce to the committee Dr. Bernadine Bulkley as the nominee of the President of the United States to be the Associate Director of the Office of Science and Technology Policy, one of the most significant offices in government in connection with so many important aspects of governmental activity, an office that looks to the future of the country.

Dr. Bulkley is a graduate, summa cum laude, from Vassar College. She received a medical degree at the Harvard Medical School, cum laude. To graduate at all is a little like Dr. Johnson and the dog that walked on his hind legs. When he was asked whether it walked well, he said: "Sir, it is not a question of whether it is well done; it is whether it is done at all." Dr. Bulkley has done it well.

To graduate from Harvard and from Vassar is an extraordinary achievement, but to graduate with honors from both places I think speaks for itself.

She is now on the National Board of Medical Examiners, and is board qualified or certified in internal medicine, in cardiology, and anatomic pathology.

She has been associated for 14 years with the Johns Hopkins Hospital, where she served both internship and residency. And of course for anyone from Maryland, to be associated with Johns Hopkins places them in a very special category. She has been a fellow in the Department of Pathology and the Cardiovascular Division, and since 1976 has been on the active staff at the Johns Hopkins Hospital in medicine and pathology.

She is director of the coronary care unit at the hospital, and she teaches at the Johns Hopkins University School of Medicine.

Dr. Bulkley's list of honors, publications, professional activities, memberships and service to the community is much too long to discuss here this morning.

I think Dr. Bulkley brings to the Office of Science and Technology one thing which is of particular importance, and that is the tradition of excellence which is characterized at Johns Hopkins and Harvard and Vassar.

She will be an extraordinary addition to the leadership at the Office of Science and Technology Policy, and I have every confidence, Mr. Chairman, that you and the members of the committee will report her nomination unanimously.

Thank you very much.

Senator GORTON. Thank you, Senator.

We will now go out of order so that Senator Wilson may introduce Mr. Bragdon, and then we will come back to the OSTP nominations.

STATEMENT OF HON. PETE WILSON, U.S. SENATOR FROM CALIFORNIA

Senator WILSON. Good morning, Mr. Chairman. I am grateful to have the honor this morning to introduce to the committee a very distinguished Californian who, like most of us, was not fortunate enough to be born there, but was smart enough to come and to stay.

Mr. Bragdon has distinguished himself through a career of some 32 years in the fire service and spent the last 20-plus years in management positions of increasing responsibility. I believe the list is before you, and it is not only lengthy but truly distinguished.

The indication of the high degree of professionalism that he has achieved and the extraordinary regard in which he is held are shown by his memberships in the leading professional fire administration organizations in which he has served as an officer and a leader.

In addition, he has received honors such as a life membership in the California State Firemen's Association. Mr. Bragdon was an honor graduate of the University of Southern California's School of Public Administration and he holds honorary life memberships in both the American Society of Public Administration and the Southern California Association of Foresters and Fire Workers.

Throughout his career, he has been involved in writing, and samples of his written works have been provided to the committee. In short, he is not only well suited but admirably suited for his future responsibility in the Federal Emergency Management Agency as the Chief Federal Fire Administrator. In that role, his responsibility will be to provide liaison with fire agencies of all kinds.

He will be involved in overseeing the clearinghouse function that the FEMA Fire Administration Agency provides by trying to bring the very latest technology to fire agencies all across the land. He began as a firefighter and a career of increasing responsibility and great thoughtfulness about the peril which the chairman so eloquently described, he brings to this job a rare set of qualifications and motivation.

Mr. Bragdon is, as he told me, presently in a situation where he has no hoses and no firetrucks, rather a lifetime of concern with the kind of loss of life, property, and destruction that in recent years seem to have been an increasing affliction whether in a total-

ly urbanized setting or in a setting that I find almost mind-boggling; for instance, he was responsible for thousands of acres in Los Angeles County, not to mention the wealth of elected officials with whom he served.

He brings both high administrative skills and a great deal of knowledge about the technology of fire suppression and fire prevention. So I will leave him in your tender care, if I may. Mr. Bragdon is eager to respond to your questions, and I am not eager to respond to the questions where I am about to go.

Senator GORTON. Thank you, Senator Wilson. We will defer all of the questions to you this morning. Thank you very much.

Senator WILSON. Thank you.

[The statement follows:]

STATEMENT OF HON. PETE WILSON, U.S. SENATOR FROM CALIFORNIA

Mr. Chairman, this Committee today begins considering the nomination by the President of the United States of Dr. John Paul McTague to be Associate Director of the Office of Science and Technology Policy within the Executive Office of the President. It is my privilege to introduce this learned scientist and professor to you and to encourage your prompt and favorable action.

While Dr. McTague is a legal resident of New York, I would ask the Chairman's indulgence in my exhibiting a bit of pride in his appointment as he was, until very recently, a long-time resident of California.

As American leaders grasp the early lessons of the information explosion of the 1980's the need for adequate, appropriate federal guidance and response is highly apparent. Indeed, America's technological strength and international competitiveness ultimately depend upon the vitality and creativity of our private sector economy. Government policies should help stimulate and release this tremendous energy.

The Office of Science and Technology Policy provides to the President scientific, engineering, and technological analysis and recommendations regarding major policies and programs of the federal government. To assist the President in providing leadership and coordination of the federal research and development programs, this office requires talented and experienced leaders.

Dr. John McTague's credentials clearly demonstrate such attributes. During his distinguished tenure at both UCLA and Columbia, at a major department at Brookhaven Laboratory, and on staff at Rockwell Science Center, Dr. McTague has demonstrated to his colleagues a keen appreciation in many areas of science. His lengthy list of published works indicates a veritable cornucopia of insights, ranging from polypeptide denaturation and copolymeric DNA to magnetoviscosity, excitations in hydrogen, collision-induced light scattering, and polarizations of interacting atoms—none of which I understand. I don't mean to make light of the intensely precise demands of his profession or depth of his insights. Truly, I am impressed with his conversancy along a broad spectrum of issues, as well as the breadth of recognition from his peers.

Mr. Chairman, John McTague will bring to the Office of Science and Technology Policy excellent substantive knowledge and a fine appreciation of the roles of government and private industry in furthering our country's understanding and use of science. I encourage this Committee to report this nomination favorably so that the Senate can offer its advice and consent. This Nation will benefit from Dr. McTague's leadership in this important field.

Senator GORTON. We will now hear from the two OSTP nominees. Starting with you, Dr. Bulkley, we will hear such opening statements as you may have, and then we will have a few questions.

STATEMENTS OF DR. BERNADINE HEALY BULKLEY; AND DR. JOHN P. MCTAGUE

Dr. BULKLEY. Mr. Chairman and members of the committee:

I am honored to appear before you this morning as President Reagan's nominee for Associate Director, the White House Office of

Science and Technology Policy in the Executive Office of the President.

The legislation establishing OSTP recognized the profound impact of science and technology on our Nation's welfare. It clearly states that Federal funding for science represents an investment in the future, indispensable to sustained national progress and human betterment.

You know well that the Federal budget has increased steadily for 40 years. Now Federal support for science is a \$54 billion enterprise—a dollar figure that exceeds the annual budgets of most of our States and many foreign nations. There is no clearer statement of the commitment of this committee, this Congress, this administration, and this Nation to the belief that science is a proper and bipartisan concern of Government, and that scientific progress is essential to national welfare.

Coincident with this increasing investment of public money comes a public trust, and necessarily an increasing role of the Federal Government in science. Scientists have in part become public servants and our universities and Federal laboratories have become public places, with both their actions subject to Federal regulations and public scrutiny. We have evolved a complex web of interdependence between the Government and the science and technology community of the university and of industry.

This complex interdependent public-private effort has never been more successful than it is today. We have witnessed astounding advances in both the physical and the life sciences which have transformed our world, and promise to bring even greater changes in the years ahead.

In this broad context, one can readily conclude that there has never been a greater need for attention to science policy than at this moment. It is also reasonable to conclude that there is now a particular need to focus as strongly on the biological and medical sciences as we have traditionally on the physical sciences. With regard to policy matters, I ascribe to the often quoted prediction, which I have heard more than once from Dr. Keyworth as well, that biology will be to the 21st century what physics and chemistry have been to this century.

I fully appreciate that the development of national science policy and priorities can only be done with the closest cooperation between the executive branch and the Congress, and calls for good communication with the scientific community.

I am grateful for the opportunity to join, at least for a time, this Government effort directly and look forward to working with Congress on many issues of mutual concern. Most importantly, I appreciate the privilege of serving our country in this capacity.

Thank you.

[The biographical sketch and answers to questions of the committee follow:]

BIOGRAPHICAL SKETCH OF DR. BERNADINE HEALY BULKLEY

Address: 8604 Park Heights Avenue, Stevenson, MD 21153.

Date and place of birth: August 2, 1944; New York City, NY.

Marital status: Divorced.

Name and ages of children: Bartlett Anne Bulkley, 4 years old.

Education:

Hunter College High School, Lexington Avenue, New York, NY. (Dates attended—1959–1962), (Graduated—June, 1962.)

A.B., summa cum laude, Vassar College, Poughkeepsie, NY. (Dates attended—1962–1965), (Degree obtained—June, 1965.)

M.D., cum laude, Harvard Medical School, Boston, MA. (Dates attended—1965–1970), (Degree obtained—June, 1970.)

Employment:

1970–71: Intern in Medicine, The Johns Hopkins Hospital, Baltimore, MD.

1971–72: Assistant Resident in Medicine, The Johns Hopkins Hospital, Baltimore, MD.

1972–74: Staff Fellow, Section of Pathology, National Heart and Lung Institutes, National Institutes of Health, Bethesda, MD.

1974–76: Fellow, Cardiovascular Division, Department of Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD.

1975–76: Fellow, Department of Pathology, The Johns Hopkins University School of Medicine, Baltimore, MD.

1976–81: Assistant Professor of Medicine and Pathology, The Johns Hopkins University School of Medicine, Baltimore, MD.

1976–current: Active Staff, Medicine and Pathology, The Johns Hopkins Hospital, Baltimore, MD.

1977–1982: Associate Professor of Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD.

1977–current: Director, Coronary Care Unit, The John Hopkins Hospital, Baltimore, MD.

1979–Current: Assistant Dean for Postdoctoral Programs and Faculty Development, The Johns Hopkins University School of Medicine, Baltimore, MD.

1981–current: Associate Professor of Pathology, The Johns Hopkins University School of Medicine, Baltimore, MD.

1982–current: Professor of Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD.

Government experience:

Cardiology Advisory Committee, National Heart, Lung and Blood Institute, Department of Health, Education and Welfare, Public Health Services, National Institutes of Health, 1978–82.

Federal Drug Administration—Circulatory System Devices Panel, 1983 ff.

Professional memberships:

American Federation for Clinical Research—
Councilor, 1977–78 (Eastern Section).

National Councilor-at-Large, 1979 ff.

Secretary/Treasurer, 1979 ff (Eastern Section).

Public Policy Committee, National APCR, 1979 ff.

Chairman, Public Policy Committee, 1980–83.

Representative to Federal Council for Internal Medicine, 1980 ff.

President-Elect, 1982–83.

President, 1983–84.

American Heart Association—

National:

Fellow, Council on Clinical Cardiology.

Fellow, Council on Circulation.

Council on Clinical Cardiology Postgraduate Education Committee, 1978 ff.

Committee on Scientific Sessions for National Meeting, 1979 ff; Vice-Chairman, 1979–82; Chairman, 1983 ff.

Board of Directors, 1983–84.

Maryland affiliate:

Member of Public Health Education Subcommittee.

Research Allocation Committee.

Member, Board of Trustees.

Vice-President, 1982 ff.

American College of Cardiology:

Film Review Committee, Annual Scientific Sessions, 1974 ff.

Fellowship, 1976 ff.

Nominating Committee, 1980 ff.
 Board of Governors, 1979-82 (Governor for Maryland).
 International Academy of Pathology.
 American Medical Women's Association.
 The Association for Women in Science, Inc.
 American Society of Clinical Investigation.
 Association of American Medical Colleges:
 Women's Liaison Officer for The Johns Hopkins University School of Medicine, 1978.
 Council of Academic Societies, Executive Council, 1981-83.
 National Institutes of Health, Department of Health and Human Services:
 Consultant, National Heart, Lung and Blood Institute, National Institutes of Health, Education and Welfare, 1976 ff.
 Cardiology Advisory Committee, National Heart, Lung and Blood Institute, Department of Health, Education and Welfare, Public Health Services, National Institutes of Health, 1978-82.
 Subcommittees of Cardiology Advisory Committee:
 Coronary Interventions and Percutaneous Transluminal Angioplasty, Chairman, 1979 ff.
 Endstage Heart Disease, 1978 ff.
 Ad Hoc Committee to evaluate progress on Left Ventricular Assist Devices, 1980.
 Federal Drug Administration—Circulatory System Devices Panel, 1983 ff.

Miscellaneous:

Co-Director, Mary Elizabeth Garrett Symposium, Woman MD.
 Board of Directors, Bethesda-Chevy Chase YMCA, 1974-75; Committee on Physical and Mental Health, Bethesda-Chevy Chase YMCA, 1973-74.
 Regional Representative, Committee on Admissions, Harvard Medical School, Boston, MA, 1974 ff.
 Steering Committee, Harvard Medical School, Regional Bicentennial Program, Boston, MA, 1981 ff.
 Co-Director, Short Course in Ischemic Heart Disease, International Academy of Pathology, 1977-81.
 Board of Directors, Stetler Research Fund for Women Physicians, 1979-84.
 Political affiliations—\$25 donation to the Republican National Committee.

Honors:

1965—Phi Beta Kappa.
 1970—Alpha Omega Alpha.
 1982—American Society of Clinical Investigation.
 1983—National Board Annual Award for Medicine, Medical College of Pennsylvania, Philadelphia, PA.
 1983—Special Award for Service, American Heart Association, Maryland Affiliate.

QUESTIONS OF SENATORS HOLLINGS AND HEFLIN AND THE ANSWERS THERETO

Question. What specific duties will each of you have at OSTP, and generally for which issues and agencies will each of you be responsible?

Answer. As Deputy Directors, Dr. McTague and I have responsibilities and involvement with the entire range of issues addressed by OSTP. Our responsibilities include working with all Federal agencies involved in science and technology policy and programs, including HHS, DOD, DOE, USDA, DOC, DOI, NSF, NASA, and EPA. Despite overlapping agency responsibilities, we shall tend to focus on issues which reflect our different interests.

In addition, I am responsible for the Health of the Universities Study which addresses the question of how far the Federal Government's responsibility for the universities extends and how this responsibility should be discharged. This particular issue includes university, industry, and government concerns.

Question. What do each of you consider to be the most important science and technology issues now facing the Nation? What specific policy priorities will each of you have if confirmed?

Answer. Continued preeminence in science and technology. Over the past forty years there has been no question that the United States has had the lead in basic science, and in technology, and in the broad range of application of science in the marketplace. Very recently our competitive edge seems to be in some jeopardy. This

is an important issue, not just in terms of how many Nobel prizes we win, but very practically in terms of the economic well-being of our nation and our industrial competitiveness. Possibly the most important issue facing the nation is that we continue to foster the science and technology enterprise, recognize it as a major priority for our nation and explore the numerous areas of potential limitation or weakness in that enterprise that needs attention. The components of competitiveness in science and technology that need attention include support for basic science in our universities and in our federal laboratories, priority setting within that support structure, funding for training of scientists for the present and the future, and a healthy partnership between government, industry, and the universities to achieve the common goal of preeminence in science.

Question. The statute creating the Office of Science and Technology Policy allows for the President, with the advice and consent of the Senate, to appoint up to four OSTP associate directors. Does the Administration plan to appoint any more associate directors?

Answer. There are no current plans to appoint any more associate directors.

Question. How many assistant directors now serve in OSTP, what are their current duties, and does the Administration plan to add any additional assistant directors or other OSTP staff?

Answer. There are presently no plans to add any new offices at the assistant director level. During the next few months, some of the vacancies on the OSTP staff may be filled.

The assistant directors include:

Assistant Director for Life Sciences (Bernadine Bulkley—acting).

Assistant Director for General Science (Ralph DeVries).

Assistant Director for Space Science and Technology (Richard Johnson).

Assistant Director for Energy, Natural Resources & International Affairs (Wallace Kornack).

Assistant Director for Institutional Relations (James Ling).

Assistant Director for Defense Technology and Systems (Maurice Roesch).

A description of their current duties is attached.

ASSISTANT DIRECTOR FOR LIFE SCIENCES—BERNADINE HEALY BULKLEY (ACTING)

The Assistant Director for Life Sciences is responsible for providing staff support to the Director of OSTP and other White House senior staff on issues relating to the life sciences including medicine, biology, psychology, biotechnology, agriculture, the environment, and the many biologically oriented policies and programs within the areas of defense, space, and energy science. In addition, the Assistant Director is responsible for the broad range of regulatory issues including risk assessment.

The Assistant Director chairs or serves on many Executive Office and Interagency groups addressing issues of importance to the life sciences, such as the Cabinet Council Working Group on Biotechnology, the HHS Technology Coordinating Committee, the National Cancer Board, the National Heart, Lung, and Blood Institute Advisory Council, the Recombinant-DNA Advisory Committee, the Committee on Interagency Radiation Research & Policy Coordination, and the Cabinet Council Working Group on Acid Rain.

The Assistant Director works with the Federal agencies involved in life science issues and programs including, but not limited to HHS, EPA, NSF, USDA, DOD, DOE, and OMB to develop budget and program policies.

ASSISTANT DIRECTOR FOR GENERAL SCIENCE—RALPH DEVRIES

The Assistant Director for General Science is responsible for articulating national science and technology policies to reflect Administration philosophy and goals. He oversees the Science and Technology budgets of the key R&D funding agencies, especially NSF, DOE, NBS, NOAA, USGS, DOT and the space science aspects of NASA. He works closely with agencies in identification of scientific priorities and in preparation of agency R&D budgets for submission to OMB and with OMB to ensure that President's budget reflects Science and Technology priorities consistent with President's goals. He works with key Congressional staff to obtain passage of President's budget and maintains close contacts with scientific and technical community for feedback and liaison.

The Assistant Director is responsible for working with agencies, White House Personnel and Science and Technology community to identify good candidates for key Administration Science and Technology positions.

The Assistant Director provides timely and useful advice to the Science Advisor on a variety of science and technology policy issues falling within his expertise and areas of responsibility.

ASSISTANT DIRECTOR FOR SPACE SCIENCE AND TECHNOLOGY—RICHARD JOHNSON

The Assistant Director for Space Science and Technology provides leadership in the development, advocacy, and implementation of Presidential policy relating to science and technology as it applies to space. He assists in the development and implementation of the Presidential policy relating to space science, research and development, technology, and commercialization. He has responsibility for participating in the resolution of issues involving space science and technology, and ensuring that the science and technology policies and programs of U.S. Government departments and agencies are consistent with overall administration objectives.

Some of the issues for which the Assistant Director for Space Science and Technology is responsible within OSTP are the following:

Implementation of space commercialization policy, long-range planning for civilian space programs, review of plans and budgets for NASA, and review of international cooperative projects in space.

ASSISTANT DIRECTOR FOR ENERGY, NATURAL RESOURCES, AND INTERNATIONAL AFFAIRS—WALLACE KORNACK

The Assistant Director for Energy, Natural Resources, and International Affairs is broadly responsible for providing staff support to the Director and other White House senior staff on science, technology and engineering matters in the areas of energy, natural resources, and international affairs. He reviews Agency program budgets and planning for conformance with the President's policies and assists in the process of developing new or revised policies. Moreover, he performs analyses and leads study groups and interagency committees to help solve special technical problems or resolve issues.

The Assistant Director is responsible for nuclear, fossil, and renewable energy supply and research issues and issues pertaining to the adequacy, prudent use and protection of natural resources. He is the Chairman of the Interagency Committee on Materials.

In the international area, the Assistant Director is responsible for coordinating the President's policies on science and technology with the nations of the world. In addition, he represents the President at the Economic Summit Working Group on Technology, Growth and Employment.

The Assistant Director leads an interagency working group on technology transfer by way of scientific and technical communications.

ASSISTANT DIRECTOR FOR INSTITUTIONAL RELATIONS—JAMES LING

The Assistant Director for Institutional Relations serves as Executive Secretary to the Federal Coordinating Council on Science, Engineering and Technology (FCCSET). He is responsible for formulating and overseeing implementation of national policy for health of science and technology infrastructure (e.g., WHSC Federal Laboratory Review, and FCCSET follow up reports; university instrumentation budgets).

He provides liaison to the White House for national Science and Technology awards (e.g. National Medal of Science, President's Awards for Excellence in Science and Mathematics Education, National Medal of Technology).

He is responsible for preparation of the President's Annual Science and Technology Report to the Congress.

He helps formulate and articulate national Science and Technology policy, and sees that it is reflected in agency budgets where relevant.

ASSISTANT DIRECTOR FOR DEFENSE TECHNOLOGY AND SYSTEMS—MAURICE ROESCH

The Assistant Director for Defense Technology and Systems has administrative and substantive responsibility for all personnel within DTS, and in their interdisciplinary analysis of national security and defense issues.

Specific issues for which the Assistant Director is currently responsible may be broadly stated as providing technological assessments related to the overall emergency management planning program for the Federal Government, the improvement of conventional war fighting capability for U.S. forces, the development and implementation of a space policy which will contribute to the National Security of the U.S., and the improvement of the overall strategic posture and war fighting ca-

pability of the U.S. In general all programs that tend to enhance the National Security posture of the U.S., and foster the improvement of U.S. defense capabilities by the application of science and technological leverage may be addressed by DTS.

As a complement to and extension of inhouse analysis, the Assistant Director also serves on numerous Executive Office and Interagency groups addressing issues of importance to OSTP. These include the Earthquake Working Group of the Emergency Mobilization Preparedness Board, Advisory Committee on Export Policy, ASAT Interagency Group, Space (SIG) Working Group, and several activities related to the continuity of government.

Overall it is the function of the Assistant Director to advise and inform the Science Advisor to the President on all current and potential scientific and technological issues that relate to the U.S. defense posture.

Question. Industrial innovation is of great concern to this Committee. The Commerce Department has programs in this area, and the Young Commission is preparing recommendations. Who in OSTP has responsibility for analyzing how the policies of the various Federal departments and agencies affect industrial innovation in this country? What steps will you take if confirmed to help ensure that Federal science and technology policy, and Federal policies in general, promote U.S. industrial innovation and competitiveness?

Answer. For the past 3 years, Dr. Keyworth, Director of OSTP, has made industrial innovation and competitiveness a major priority for all OSTP staff. The Associate Directors are very much committed to and involved in that effort.

I shall play an active role in ensuring that Federal science and technology policy, particularly in the life sciences, promotes U.S. industrial innovation and competitiveness. One of my first projects will be to chair for Dr. Keyworth the Cabinet Council Working Group on Biotechnology. The Working Group is reviewing the regulatory rules and procedures relating to biotechnology and expects to identify ways in which the Federal Government can enhance the U.S. competitive position in that field without ignoring any possible risks to the public.

Another example is my involvement in the WHSC Health of the Universities Study. This panel is broadly concerned about the university's role in keeping America competitive via advances in science and technology, the federal responsibility in this process and how to maximize the benefits of the university-industry-government collaboration.

Questions. What steps has OSTP taken, or will it take, to ensure that the various Government R&D programs, including those of the National Science Foundation, are directed in ways that help U.S. industry meet strong foreign economic challenges in specific areas such as advanced computers and biotechnology?

Answer. OSTP is exploring many avenues for helping U.S. industry meet its international competition. Its policy is to ensure a continuous supply of technology and manpower by supporting basic research in the universities and the Federal laboratories and an economic and regulatory climate that permits the private sector to use the results promptly and efficiently.

For example, OSTP is working with industry to increase the use of the Federal laboratories for industry-sponsored research. A project with the steel industry and Oak Ridge and Argonne National laboratories to develop technology for the 1990's is underway.

OSTP is working with DOD, DOE, and NSF on programs to develop and make available to the research community a new generation of advanced computers. A White House Science Council Panel is reviewing the status of advanced computers and will recommend Federal priorities and responsibilities.

Furthermore, the Director of OSTP is chairing the Cabinet Council Working Group on Biotechnology whose study includes:

- Reviewing the regulatory requirements which have been applied to commercialized biotechnologies.

- Identifying existing laws and regulations that may be applicable to biotechnology.

- Reviewing the function of the Recombinant DNA Advisory committee and its role in biotechnology commercialization and safety regulation.

- Clarifying the regulatory path that a company with a new product would follow to meet federal health and safety requirements.

- Determining if the current regulatory requirements and Federal review are adequate to deal with new products.

- Developing specific recommendations for administrative or legislative actions to provide additional regulatory review if warranted while maintaining flexibility to accommodate new developments.

- Reviewing court rulings regarding the granting of patents for biotechnology.

Identifying ways in which Federal actions such as R&D or regulatory certainty could affect commercialization and U.S. competitive position vis-a-vis international firms.

The principal objective of the study is to outline a streamlined procedure for Federal approval of the use of the products of biotechnology. In reducing the time and cost involved in the process, U.S. industry which is at the forefront in this developing area will be better able to compete in international markets.

Question. Why has the Administration not created Centers for Industrial Technology, as directed by the Stevenson-Wylder Technology Innovation Act of 1980? Do you intend to implement this part of the Act, especially for those highly fragmented industries which lag technologically but which are not likely to form joint R&D ventures on their own?

Answer. The answer to the question of how best to provide industry with innovative technology is not to create new organizations, but rather to provide incentives for industry, including those highly fragmented industries that are not likely to form joint R&D ventures on their own, to sponsor research in existing institutions. The Administration believes the present research community provides adequate facilities and staff for "the development of the generic research base, important for technological advance and innovative activity", called for in the Stevenson-Wylder Act.

OSTP is working actively with industry, the Federal laboratories and agencies and the universities to develop the kind of long-term, high-level commitment to a research partnership between the providers and consumers of scientific and technical innovation necessary to bring U.S. industry to a competitive advantage.

Question. What role does OSTP play in setting the Administration's budget priorities for such technical agencies as the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration? What role do the two of you believe OSTP should play in determining their budgets and protecting the integrity of their R&D programs?

Answer. The National Science and Technology Policy, Organization, and Priorities Act establishing OSTP lists advising the President on Federal budgets relating to science and technology as one of its responsibilities. OSTP works with the agencies, including OMB, with Congress, with members of the research community, and with industry to develop budget priorities. Its role in a particular area can be as active as staff and time permit. OSTP is obligated to see that the limited resources for federally sponsored research and development are used to the best advantage. OSTP will assist both NOAA and NASA in developing R&D programs, especially in basic science, that are appropriate for increased Federal funding. We are particularly concerned that NOAA has not fared well recently and particularly in its R&D programs. We are now, actively working with NOAA on the FY86 budget with the clear intent of protecting and enhancing the integrity of these important research programs.

Question. At a time when the Administration professes strong support for science and technology, and for environmental protection, why has it consistently proposed deep cuts in NOAA's research and development budgets? What steps has OSTP taken, or will it take, to help NOAA with its research programs?

Answer. The cuts in NOAA's research and development budget reflect the increased competition among the Federal agencies for a share of the research and development budget. OSTP is examining the NOAA budget in detail and plans to assist the agency in developing a vigorous research program with added emphasis on basic research areas that the private sector will not support.

Senator GORTON. Thank you very much. Dr. McTague.

Dr. McTAGUE. Thank you, Senator.

My name is John McTague. I am a scientist with backgrounds in physics, chemistry, and materials science. Most recently, I have been the first director of the newly commissioned National Synchrotron Light Source, a multidisciplinary Government/university/industry facility at Brookhaven National Laboratory in New York.

For the record, I should note that I am currently a resident of that State, but for the 18 previous years I lived in California where I was on the scientific staff of the Rockwell Science Center, followed by 12 years as professor of chemistry and a member of the

Institute of Geophysics and Planetary Physics at the University of California, Los Angeles.

Having had my feet in all three camps, I am convinced of the importance of Government/university/industry linkages in strengthening and utilizing our science and technology bases and in training the new talent for the future well-being of the Nation.

I appreciate the opportunity to meet with you today. Thank you.
[The biographical sketch, answers to questions of the committee, and statements of the record follow:]

BIOGRAPHICAL SKETCH OF DR. JOHN PAUL MCTAGUE

Address: Weekends: 2 DeMarre Lane, Bayport, NY 11705; Weekdays: c/o Dempsey, 13304 Beall Creek Court, Potomac, MD 20854.

Date and place of birth: November 28, 1938, Jersey City, NJ.

Marital status: Carole Frances Reilly (McTague).

Names and ages of children: Kevin W. McTague, 21; Catherine E. McTague, 20; Margaret A. McTague, 18; and Maureen E. McTague, 14.

Education: Brown University 1960-1964 Ph.D. 1965; Georgetown University 1956-1960 B.S. 1960.

Employment record:

1982—Chairman, National Synchrotron Light Source Department, Brookhaven National Laboratory, Upton, NY.

1982-1984—Adjunct Professor of Chemistry, Columbia University, New York, NY.

1970-1982—Professor of Chemistry and Member, Institute of Geophysics and Planetary Physics, University of California, Los Angeles, CA.

1964-1970—Member, Technical Staff, North American Rockwell Science Center, Thousand Oaks, CA.

Government experience: 1982-1983—Air Force Office of Scientific Research; Georgetown Chemistry Advisory Panel.

Memberships: American Chemical Society, Member; American Physical Society, Fellow, APS Division of Chemical Physics Executive Committee 1977-1980, Associate Editor, The Journal of Chemical Physics 1980-1982; American Association of University Professors; and Sigma XI.

Political affiliations and activities: Contributions: Committee to Reelect Congressman Carney (R-NY) \$125 (1984), \$20 (1982); Republican Senatorial Campaign Fund \$120.00 (1983); Registered Democratic 1974-1981; and Registered Independent 1982-.

Honors and awards: American Chemical Society California Section Award, 1975; John Simon Guggenheim Fellow, 1975-1976; Alfred P. Sloan Fellow, 1975-1973; NATO Senior Fellow, 1973; National Science Foundation Cooperative Fellow, 1962-1963; Union Carbide Fellow, 1961-1962; American Physical Society Fellow, National Institutes of Health, and Predoctoral Fellow, 1963-1964.

QUESTIONS OF SENATORS HOLLINGS AND HEFLIN AND THE ANSWERS THERETO

Question. What specific duties will each of you have at OSTP, and generally for which issues and agencies will each of you be responsible?

Answer. We are each responsible for maintaining perspective over the whole of OSTP's operations, but there is natural concentration of effort in those areas where we have particular expertise. As a physical scientist, I have a special interest in physical and mathematical sciences, space science and technology, energy, and defense technology and systems. There is no exclusivity, but agencies involved in these activities include NSF, NOAA, NBS, DOE, DOD, and NASA.

Question. What do each of you consider to be the most important science and technology issues now facing the Nation? What specific policy priorities will each of you have if confirmed?

Answer. I see three major themes as being vital to the long term health of our science and technology enterprise and to increasing the contribution of science and technology to the quality of life in the Nation. The first, most important, and longest range is the training of talent for future knowledge generation and technological application. It is no accident that we are presently the world leaders in most areas of science. Over the past ten years we have won seventy percent of all science Nobel prizes, and last year we took all of them. It is also no accident that we lead the

world in such technology-intensive areas as computers, electronics medical and scientific instrumentation, commercial aircraft, and space technology. The coupling of research with science and engineering education in our universities encourages both the creativity and skill development of our best minds. Past success is, however, no guarantee for the future. We must continually strengthen the training of our next generation of scientific and engineering leaders.

Closely coupled with this is the nurturing of excellence in science and technology. The paradigm of scientific excellence is elementary particle physics research. Here, some of our best minds are working on the most fundamental questions of the nature of matter and the origin and future of the universe. The product of this research is not a new electronic device or a better automobile—it is knowledge of our universe, an enrichment of the human spirit, and setting a tone of pure excellence. Excellence is contagious, and the excellence of particle physics research affects other components of our universities and national laboratories.

Third is how better to capture the fruits of our scientific and technological knowledge and talent base for increasing the competitiveness of U.S. industry, both in the traditionally high technology areas and in our presently less competitive basic industries. Key to this is increasing effective linkages between our federal laboratory system, our universities, and individual corporations and industrial consortia. OSTP has played and will continue to play a seminal role in encouraging such linkages, or partnerships.

One example is the cross-disciplinary Engineering Research Centers proposed in the President's FY85 budget. Sponsored by NSF, these centers will involve the specialists in engineering practice in our industries in cross-disciplinary engineering projects and training in universities. Working on real problems of a scale not usually attempted on university campuses in an integrated manner will both increase linkages between the university and corporate cultures and train future engineers and technologists in integrated approaches to forefront engineering problems.

Another is the steel initiative, inspired by two members of the President's Commission on Industrial Competitiveness (the Young Commission), Pete Love, CEO of National Intergroup, and Jay Keyworth, the President's Science Advisor. Love noted that our basic industries, such as the steel industry can no longer rely on advantages in capital, labor, raw materials, or energy costs to get a competitive edge—in the long run they must get a technological advantage. The federal laboratory system represents a very large technological resource, fully 1/3 of the total national R&D enterprise, which to date has hardly been tapped for industrial competitiveness. OSTP has played the role of marriage broker between a few of these laboratories and the major integrated steel manufacturers to form a partnership exploring possible generic research aimed at generating a technological leapfrog in steel manufacturing. It is too early to know if this partnership experiment will be successful, but if it is, it could serve as a model for such research partnership with other industries which have difficulty in assembling the needed technological efforts.

Question. The statute creating the Office of Science and Technology Policy allows for the President, with the advice and consent of the Senate, to appoint up to four OSTP associate directors. Does the Administration plan to appoint any more associate directors?

Answer. There are no present plans to appoint additional associate directors in OSTP.

Question. How many assistant directors now serve in OSTP, what are their current duties, and does the Administration plan to add any additional assistant directors or other OSTP staff?

Answer. There are presently six assistant directorates in OSTP. General Sciences encompasses physical as well as other sciences. The other directorates are Space Science and Technology; Energy, Natural Resources, and International Affairs; Institutional Relations; and Defense Technology and Systems, and Life Sciences. OSTP is a small organization, with approximately twenty-five professionals, and most issues are approached in a cooperative rather than compartmentalized manner. There are no present plans for major staff size or responsibility changes.

Question. Industrial innovation is of great concern to this Committee. The Commerce Department has programs in this area, and the Young Commission is preparing recommendations. Who in OSTP has responsibility for analyzing how the policies of the various Federal departments and agencies affect industrial innovation in this country? What steps will you take if confirmed to help ensure that Federal science and technology policy, and Federal policies in general, promote U.S. Industrial innovation and competitiveness?

Answer. Industrial innovation is one of the highest priority areas in OSTP. Involving the Director, Jay Keyworth, on a daily basis. He also serves on the Presi-

dent's Commission on Industrial Competitiveness. Both I and a significant fraction of the staff are and will continue to be involved in creating the opportunities for linkages of industry with Federal laboratories and universities to increase the utilization of our talent and knowledge base, as I discussed earlier. This will be a high priority for me if confirmed as Associate Director.

Question. What steps has OSTP taken, or will it take, to ensure that the various Government R&D programs, including those of the National Science Foundation, are directed in ways that help U.S. industry meet strong foreign economic challenges in specific areas such as advanced computers and biotechnology?

Answer. Our overall guiding policy is to ensure, through funding university research activities, an unsurpassed supply of new ideas, knowledge and talent. The private sector will be able to tap this in a regulatory and economic climate which encourages risk-taking and government, industry and academia cooperation.

I earlier mentioned the importance of NSF's Engineering Research Center Initiatives. There is a broad-based Federal effort to encourage advances in forefront computing, including NSF's program to increase supercomputer access to university researchers. This will enable the next generation of scientists and engineers to develop the skills and the software to innovate in such areas as massive parallel processing. Likewise, in DOD, DARPA has a large scale program to stimulate advances in artificial intelligence and expert systems, and DOE continues to encourage advances in supercomputers through its purchase of forefront machines.

Dr. Keyworth established a FCCSET Committee on Supercomputers in 1982 to make recommendations for Federal programs in three areas: (1) research access to supercomputers; (2) stimulation of supercomputer developments through government purchases; and (3) government supercomputer related R&D.

The Committee issued its first two reports in November 1982.

Dr. Keyworth has also just established a blue ribbon White House Science Council Panel on Advanced Computing to survey technology trends in this whole field, and to make recommendations for Federal R&D priorities and responsibilities.

Question. Why has the Administration not created Centers for Industrial Technology, as directed by the Stevenson-Wydler Technology Innovation Act of 1980? Do you intend to implement this part of the Act, especially for those highly fragmented industries which lag technologically but which are not likely to form joint R&D ventures on their own?

Answer. The Administration believes that other measures, such as the NSF-sponsored Engineering Research Centers and Federal Laboratory-Industry research partnerships have greater potential for effective technological innovation and technology transfer than the Centers for Industrial Technology. The partnerships are natural linkages entered into because both sides perceive benefits to themselves, so the efforts are more likely to succeed since they are true partnerships. Furthermore, they will naturally dissolve when they are no longer needed, perhaps to be replaced by other partnerships in other areas.

Question. What role does OSTP play in setting the Administration's budget priorities for such technical agencies as the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration? What role do the two of you believe OSTP should play in determining their budgets and protecting the integrity of their R&D programs?

Answer. The National Science and Technology Policy, Organization and Priorities Act of 1976 (Public Law 94-282) established OSTP and charged its Director to "advise the President on scientific and technological considerations with regard to Federal budgets, assist the Office of Management and Budget with an annual review and analysis of funding proposed . . . and aid the Office of Management and Budget and the agencies throughout the budget process . . ." OSTP cooperates closely with agencies in the preparation of their research and development budgets, helping to maintain an overall consistency in Federal science and technology efforts, and encouraging excellence, relevance, and appropriateness in the efforts of all agencies.

I believe this mode of operation has been quite effective and should be continued and strengthened.

Question. At a time when the Administration professes strong support for science and technology, and for environmental protection, why has it consistently proposed deep cuts in NOAA's research and development budgets? What steps has OSTP taken, or will it take, to help NOAA with its research programs?

Answer. OSTP is interested in strengthening the basic research program in NOAA and in increasing the relevance of its R&D efforts to the overall NOAA program. Compared to our understanding of other areas of science, our understanding of the oceans is limited. A strong basic research program in marine ecology, re-

sources, etc., would be of great benefit to the Nation. To this end, OSTP is currently evaluating how the NOAA R&D program might be improved, and what budget actions might be appropriate to effect these improvements.

STATEMENT OF HON. PAUL TRIBLE, U.S. SENATOR FROM VIRGINIA

Mr. Chairman, I want to welcome Dr. John McTague to the Committee's proceedings today and say how very pleased I am to be able to lend my support to his confirmation.

Dr. McTague is a person of exceptional talent and achievements. In the twenty years since Dr. McTague graduated from Brown University he has held teaching, advisory and management positions with diverse organizations from Rockwell Science Center in California to Columbia University. In addition to a distinguished professional career, he has published nearly one hundred scholarly treatises in his chosen field. I believe we could not be presented with a more capable or qualified individual for the Office of Science and Technology's Associate Director position.

I have had the opportunity to work with Dr. McTague at some length on an important research laboratory planned for construction in Virginia, the Continuous Electron Beam Accelerator Facility, in Newport News. In addition to Dr. McTague's unquestionable professional qualifications, I would like to say to my colleagues that he is unfailingly responsive and impressed me with his unique ability to translate particle physics into terms comprehensible to lay persons.

I recommend Dr. McTague to my colleagues and urge his prompt confirmation.

Senator GORTON. Thank you.

In connection with most of these questions, I should like to have answers from each of you to the extent you feel you can contribute.

As you know, each year AAAS analyses research and development funding in the President's proposed budget. This year the report noted that, while R&D was treated well generally, physical and related sciences as well as defense R&D were singled out for especially large increases, while other R&D budgets were reduced or kept at level funding.

To the extent that you are able to answer the question, would you comment on how OSTP arrives at those priorities, and how it ensures that the scientific community participates in setting them?

Dr. BULKLEY. With regard to the areas that did not fare as well, I have some particular concern, with the life sciences. Part of the explanation is that the areas that fared the best were the ones that are program oriented and reflect priorities, which hopefully reflect needs of the Nation.

I think in the life sciences area there has been a tendency to treat the budget items more as entitlements rather than as targeted scientific priorities and initiatives. There are across-the-board small increases rather than targeted substantial increases for special programs such as basic research emphasis reflected in the more successful science budgets. This is something which the OSTP is quite concerned about and hopes that in the Presidents fiscal year 1986 budget, there will be some changes.

Dr. McTAGUE. My area of concentration is more along the physical and defense fields than health from my background, but I would like to state that the single most important criterion which is exercised in our office with respect to support of science and technology is excellence.

There is no substitute for excellence in the search for new knowledge. We seek advice from many sources with respect to possible directions for which support should be given, among them being, on the individual grant basis, peer review for which there is no

substitute. Excellent workers in a given field are the best judges of their peers, and over time this system has served the Nation exceedingly well.

On larger scale projects and on directions, we seek advice from organized groups such as the National Academy of Sciences, the National Academy of Engineering, and the various professional societies, and individual scientists, et cetera. I believe that the system of evaluation in this country is very thorough, very fair, and judged by our track record it has done well.

One of the unique responsibilities of the Federal Government is to make sure that long-term high risk basic research receives its appropriate support. And indeed in this administration, in nondefense R&D the support of basic research has gone from being the smaller of development applied research and basic research, to the largest of those three components now representing 40 percent of nondefense R&D budget.

Particularly important in that category is to note that more than half of our basic research support has a dual benefit, in that it is spent at the universities where, in addition to generating new knowledge, new talent is being trained for the very long haul well being of our Nation, and I believe that is a very good sign.

Senator GORTON. What effect, if any, do research briefings presented to OSTP by a panel of National Academy of Scientists have on this priority setting process? Are they important?

Dr. BULKLEY. The briefings which you are referring to are provided to the office on an annual basis. We have just identified seven or eight areas for briefings, and the National Academy is in the process of preparing them.

Senator GORTON. They are in the process of—

Dr. BULKLEY. Preparing briefings in anticipation of 1986 budget. About a third of the briefings are in the life sciences. These reflect concerns of the office for the future. The request to the National Academy is that these briefings not be consensus statements, but rather that they point to needed areas and new directions for future attention and investment.

These briefings are extremely useful, although they are not the only mechanism we use, for setting priorities.

Dr. McTAGUE. There are several types of input that we get even from the National Academy of Sciences, one of which is the COSE-PUP briefings which, as Dr. Bulkley has pointed out, are intended to be timely indicators of likely future important areas.

In addition, we get systematic reviews through the National Academy of Sciences on areas in particular where priorities must be set—such as for example the field report in astronomy and the Bromley report in nuclear sciences—both of which have set specific priorities for importance of facilities.

These specific priorities have been followed by the administration in its recommendation for budget action. At present we have ongoing a study of large-scale facilities in the materials sciences area chaired by Dr. Seitz, the former head of Rockefeller University. They will be reporting very shortly on the status of facilities such as synchrotron light sources, neutron scattering facilities and their importance to materials science and related areas; and I believe, judging by the past quality of the reports, that their recom-

mentations will be taken very seriously and in large measure implemented.

Senator GORTON. Dr. Bulkley, what particular priorities or areas of emphasis have you identified with respect to the life sciences?

Dr. BULKLEY. One priority is to become involved more directly in the formulation of the HHS-NIH budget, which as I alluded to earlier has not had major input from OSTP in the past.

Again, our concern is that there be a more programmatic emphasis. The Institutes of Health, are an aggregation of institutes and the separate institutes structure provide broad mission orientation. But, the individual institute budgets, have not in general been set according to specific priorities within targeted areas of science.

We are also very concerned about the area of biotechnology. OSTP has been asked to chair the Cabinet Council Working Group on Biotechnology. It is the goal of that group to facilitate the translation of basic developments in the field to the marketplace. We believe that this will be an important effort of the next 6 or 8 months, and also is compatible with the overall concerns of OSTP about fostering healthy government, industrial, and academic interchange.

One aspect of that effort is to look at the RAC, which has recently had a great deal of attention in the press. We believe the RAC is an excellent example of how one can interject science early in the regulatory process. We will be looking at existing regulations and statutes, and the jurisdiction of each of the agencies looking for areas of overlap or voids. We hope such a review can facilitate the ability of the fledgling biotechnology industries to more efficiently interact with the Government on regulatory and scientific issues.

Senator GORTON. This is for both of you. Would you give your opinions about the division of Federal and private sector responsibilities in civil research and development?

Dr. BULKLEY. You mean in nondefense?

Senator GORTON. Yes, nondefense.

Dr. BULKLEY. For nondefense R&D. There has emerged four-component process which involves the public and private sector.

The first is a well-recognized commitment on the part of the Federal Government to fund basic research. Basic research may be funded to a small degree by the private sector, but it is always going to be the major responsibility of the Government because of its long-term investment nature, and a turnaround time of a decade or more for most advancements in science. So the basic research role is the Government's.

The second important role of the Government is that unnecessary roadblocks not be placed for translating basic research developments into applications, yet meeting the responsibility of the Government to protect the public against risks which the applications may pose. Government has a dual role, to facilitating advances but also to protect Government has the interests of the public and in both ways serve an advocate of the public good.

A third component in the process is industry. It is the private sector which translates the basic developments in the research arena, most of which have come, or at least 90 percent, in the non-defense area have come from the universities, into application,

whether it be in the area of computers, physical sciences, or the life sciences.

The final phase of scientific development, which is in the private sector, is the free market system which determines whether or not these scientific advancements in their applied form are really viable, and whether they were worth being pursued in the first place.

This is a tidy evolution which applies to almost any area of translation of basic science into the marketplace. You can see it in biotechnology, you can see it in commercialization of space, it is relevant to computer sciences. It is a nonspecific process involving the public and private sector equally which is applicable across the fields of science and technology.

Senator GORTON. Dr. McTague?

Dr. McTAGUE. Research and development in the United States is a very large-scale activity that represents over \$120 billion, roughly divided between Federal and private support about equally. There is a great difference, though, between research and development.

About two-thirds of the funds are indeed development funds, which is to say activities oriented toward the production of a specific product, be it an automobile or an MX missile. By and large, the free marketplace has served us very well with respect to development activities—that is to say, activities most closely related to product—and Government involvement in these activities, except under rather circumscribed circumstances, does not have the advantage of the profit motive and has not in the past been very productive, as for example in the case of energy development demonstration projects in the 1970's.

However, Government does have a role in development in areas where it is the consumer of the product, for example, in defense technologies, since no one else has the motivation to develop new defensive capabilities. It also has an important role to play in highly regulated industries such as the nuclear power industry in developing new technologies.

On the other hand, the basic research end, which Dr. Bulkley has pointed out, has long lead times and has uncertain capturability of product, the Federal Government plays a unique role as a national trustee. I believe that it is well arguable that this investment in basic research indeed does have very high leverage payoff in the long term. It is not capturable by a particular industry, perhaps, but the Nation as a whole is very well served by the role that the Federal Government plays in supporting basic research.

Senator GORTON. Could each of you give your views on the administration's science education initiatives?

Dr. BULKLEY. That is a problem to be approached at different levels. There has been considerable national attentions about secondary school education as outlined in the recent Department of Education publication *A Nation At Risk*, expressing general concern about the state of education in this country. That has led to some initiatives recognizing the important role of our teachers in the secondary schools in that process. The science and math teachers awards program at the White House is one example of recognizing math and science education at the secondary school level as being extremely important and a key element in attracting the

best talent, the best and the brightest into science. They represent the future health of science.

There have also been efforts toward making scientific careers more attractive to those starting out. One initiative is the Presidential Investigator Award, which is directed to young faculty, who are in many ways the role models of our students, and are important in stimulating students to choose careers in science and technology. That particular program, as you know, is one which has been particularly effective in the engineering area where there has been an identified need for more talent at least in the recent past. The Presidential Investigator Award, is a 5-year grant which offers up to \$100,000 a year, and relies on both industry as well as Government support. A major part of the support of science and math education comes with the message that basic research itself is being supported in our universities. Unless you support the environment in which research is being conducted, it does not make sense to support science education per se.

OSTP has just embarked on a Health of the Universities study—which is being chaired by David Packard and has a membership both from the White House Science Council and others selected from the universities and from industry. One goal of that study, is to examine science education in our universities as a part of the success of the overall scientific enterprise.

The infrastructure of our universities is another issue in that study. The question of foreign students in our universities and their role in the scientific enterprise is also going to be addressed. And in the broadest sense, a look at the relationship between the Government and our universities, and the commitments that are involved on both sides. The escalating 40-year investment in our universities in science and technology, and the changes and transformations which have occurred within our universities as a result of the Federal investment need to have a special look. This study is a statement of our concerns about science education at the university level, which is the launching pad for scientists who will be conducting research in the next several decades.

Dr. McTAGUE. As Dr. Bulkley has pointed out, this problem exists on several levels: The level of the training of forefront scientists and engineers in our graduate institutions is I believe the most important item that we can follow to make sure that we have the most excellent research and teaching professors that we can obtain.

The Presidential Young Investigator Program, which is oriented directly toward capturing the best young people for science and engineering professorships is a very important item.

It is also particularly important, I believe, to—especially in the engineering area—to get involvement in the education process from those who have direct practical experience. That is, namely, those in industry. One of the programs oriented in this direction are the new cross-disciplinary engineering research centers which the National Science Foundation has proposed in its fiscal year 1985 budget. These are programs to have large-scale cross-disciplinary research involving industrial partners at the universities in order to teach forefront practical, as well as analytical, engineering skills to the new students through actual relevant research.

I believe, by and large, our graduate training situation is in very good shape relative to any other nation. The undergraduate situation I believe also is quite good, but there are getting to be some signs of fraying at the edges, namely in terms of equipment in universities for teaching and research. As Dr. Bulkley has pointed out, this area is being addressed by the White House Science Council's Committee on Health of Universities at the moment.

More serious problems exist in precollege education. Precollege education is a very, very large-scale enterprise, so large that it cannot be tackled by the Federal Government alone, and indeed it is so locally important that it should not be mainly tackled by the Federal Government. The Federal Government, has however, an important role to play in setting the tone for improvement of education at the precollege level.

The many ways it can do that are symbolic, such as the Presidential Awards for Excellence in Science and Math Teaching. Some of them are of the character of setting the tone for new directions in teaching materials and techniques. Along this line, I am pleased to note that recently Dr. Bassam Shakashiri, an eminent chemical educator from the University of Wisconsin, has indicated that he will assume the directorate of the Science and Engineering Education Program at the National Science Foundation. I expect over the next year and future years to see very interesting innovations coming out in particular to involve university teachers with local high school and grammar schoolteachers in developing new materials and new techniques at the local level as appropriate.

I believe that this is one of the most important problems for the long-term future of our Nation. It is a problem which must involve not just the Federal Government, and not mainly the Federal Government, but must involve grass roots and local industry and most particularly parents.

Senator GORTON. Thank you.

I would like to move on to the subject of space and ask each of you to comment generally on your views on the direction and goals of our civilian space program for the next 20 or 25 years, with special reference to the President's initiative for a manned space station, and to the increasing private sector interest in space and what role that should play.

Dr. BULKLEY. I think the space initiative is an elegant example of how Government supported basic science has rapidly moved into the area of applied technology and now is emerging into the private sector. Some of the decrease in development funds, in the non-defense R&D budget, as we are seeing more money in basic science is because some of the support of development in the space program has been moved into the private sector.

With regard to the overall space program, there is no doubt that the administration is committed to a continued vigorous space program. The space station has perhaps been the most controversial component of the space program, particularly manned space station. As is the administration's position that the space station will not sacrifice the other thrusts in the space science area. Much of the value of the space station, whether it be a way station, a fueling station, a means of upgrading what is already in space such as the space telescope or an opportunity to go to the Moon or Mars, in

part remains to be seen. It is part of the long-term vision of our space program.

With regard to the private-sector involvement, the Landsat program is a good example of the involvement of the private sector in the space program. At the present time, we have had several applications submitted, and they are in the process of review.

Senator GORTON. Dr. McTague.

Dr. McTAGUE. There are three important aspects of the space program in general, one of which is space commercialization; the second of which is defense utilization of the space capabilities, in particular for remote sensing and communications; and the third, and by no means the least important, is that of basic science.

At present in the NASA budget, the basic science effort represents approximately 18 percent. I believe it is important to maintain vigilance that equivalent effort be sustained in the future, and that the science enterprise not become a victim to any cost crunches in other parts of the space program. Both OSTP and NASA are highly sensitized to the importance of maintaining a very vigorous space science program.

In particular, in the present 1985 budget proposal we have initiated several low-cost orbiting missions for science, including the Mars Geoscience Climatology Orbiter and the Upper Atmosphere Research Satellite. In addition, there is a joint enterprise with the Navy, the Naval Remote Ocean Systems Satellite for studying wave motions on the Earth.

It is important that such low-cost missions be maintained over long periods of time. We are working very closely with NASA on this. It is also important that in the development of the manned space station at all three operations—namely, commercialization, defense applications, and science—receive balanced shares. There are several important research items to be done, I believe, in the areas of potential commercialization such as effects of microgravity on materials synthesis, and possible applications in the area of life sciences.

It is, I believe, an appropriate Federal role to support the basic underlying generic research which may ultimately lead to more commercialization enterprises in these areas and then important for the private sector to exploit commercialization itself.

The space station has significant capabilities for making more flexible the scientific possibilities of various remote sensing probes such as telescopes and Earth monitoring stations by being able to bring them back to base on the space station and alter them, or replace components as the experiments proceed.

So I see many possibilities for the application of a space station, both in the immediate future and as a window toward what the next step is going to be in space. For example, using the space station as a way station for assembling larger scale probes which may ultimately bring man for a long time period onto the Moon, or perhaps for a visit to the planet Mars, which I hope will be in my lifetime.

Senator GORTON. Thank you.

As both of you know, the administration's budget for research at NOAA has been lower consistently than it has for research in other agencies. This is a matter of particular concern to me, and I

wonder whether or not we can expect any change in direction, or what degree of enthusiasm we will see in the 1986 administration budget for that kind of research.

Dr. BULKLEY. I think we have become aware, and in part due to some conversations with members of your committee, that NOAA needs more attention. We recognize that fully. The oceans are important, and there have been substantial cuts particularly in some of the research programs within NOAA.

There are a number of ways that NOAA can be helped and certainly one of them is more emphasis on the basic research, support for example through extramural grant programs in areas of marine biology.

There is also interest in OSTP in fostering better relationships between the Federal laboratories and the research activities of NOAA, analogous to the recommendations made in the Packard panel report on laboratories.

So I can assure you that in the 1986 President's budget, NOAA will receive great attention from OSTP. We have already started looking at some of its problems, and I hope there will be a noticeable change in the months ahead.

Senator GORTON. Thank you.

Dr. McTAGUE. It is certainly not the intention of the administration to gut NOAA. The intention of the administration is to make sure that programs that are supported are of excellent quality. We are at present in an evaluation process within OSTP for making recommendations for improvements in NOAA operations, and in particular in more clearly defining laboratory missions, reducing Government micromanagement, and increasing support in appropriate areas such as mentioned by Dr. Bulkley in the basic research areas.

It is a priority item in OSTP at the moment, and we expect to see significant improvements in program and hopefully in budget levels in NOAA in the 1986 budget.

Senator GORTON. Thank you.

This committee has shown a considerable interest in issues relating to American productivity and innovation. I wonder if each of you can comment on the role OSTP has taken and will take in ensuring a Federal contribution to this area with special reference to fields in which there is a considerable foreign competition such as supercomputers.

Dr. BULKLEY. There is a strong commitment on the part of OSTP and certainly of Dr. Keyworth to the notion of competitiveness in the United States, nationally and internationally. A major component of our competitiveness in the industrial sector is through science and technology. It is by no means the only component, and there are other issues having to do with investments, management-labor issues, which are clearly part of the competitiveness issue, but science and technology is probably the engine which drives, and traditionally has driven, our success in industrial competitiveness.

There is a commitment on the part of OSTP to continue to foster the public governmental exchange with regard to industry, and I think one very good example is the effort that OSTP has been making recently with regard to the steel industry.

The steel initiative as a model of how the Federal Government through the use of existing resources—namely, the Federal laboratories—can help foster basic R&D within the private sector. In an industry like steel, there is a considerable amount of research and development which is not being done by the industry itself in part because of its own financial difficulties. The Federal laboratories offer a unique opportunity to help provide some adjunct R&D that is not being done by the industry itself.

OSTP has been very active in fostering that kind of exchange, which hopefully can develop new ways of making steel, and particularly helping us in a competitive posture with Europe and with Japan.

In the computer area, there has been much concern about our competitiveness with the Japanese. There is no doubt that we still have a competitive edge, but that in the supercomputer field we may be losing to Japan.

If one looks, however, at our Federal investment in the computer research and training area, it is roughly \$350 million. Much of that is going toward the development of new and faster computers. There has been a great deal of interest in the supercomputer issue within OSTP. I might add, perhaps somewhat parochially, that the National Cancer Institute, is about to obtain a supercomputer for application to problems of genetic engineering which we have enthusiastically supported.

Dr. McTAGUE. I think we should separate this discussion perhaps into two areas, one of which is the high technology area or traditionally R&D intensive industries, and the other is basic industries which have been around for a long time and which traditionally do significantly less investment in R&D than the nationwide average, which is approximately 2.66 percent of sales.

By and large our high technology industries, such as the computer industry, are in very good shape, the headlines with respect to Japanese supercomputers notwithstanding. The United States literally dominates the world market in computers: witness the recent EEC efforts to restrain IBM within Europe.

We still have the world's fastest computers, the world's largest computers, the world's most intelligent computers. Japan is starting to give us a good race in a specific area, which is supercomputers, but supercomputers are a small part of the total market, on the order of a fraction of a percent of the computing market.

Nevertheless, even in the supercomputing area, our present computers out-perform both those in production and the ones close to coming out on the market in Japan. Nevertheless, there are very important things that we must do to maintain our lead in this vital field, one of which is to make sure that we have the proper talent trained to utilize the evolutions that are occurring in the computer area with respect to computer architecture, in particular, parallel processing, one of the fields which is going to lead to very significantly faster computing capabilities. It involves a whole new way of thinking about software. That means we have to train new people in our universities to think differently. As a result, we have been fostering an effort through the National Science Foundation to support training efforts and access to supercomputers for the next generation of scientists and engineers.

On the other end of the spectrum, the basic industries, I believe that we have a real challenge to our Nation. We cannot compete with other—and we do not wish to compete with other nations on the basis of having lower cost labor. We no longer have lower cost raw materials than most nations. We no longer have significant advantages in the cost of energy over other nations.

The main advantage that we still have is our high technology base. If you look at the balance of payments for high technology industries in the United States, it is positive and strong. For basic industry, or industries that invest less than the average in R&D, it is negative and getting significantly worse.

I believe that we must make sure that we utilize the talent and the capabilities that we have in this country to increase our technological edge by, where appropriate, making it accessible to our basic industries such as the steel industry, such as the machine tool industry. One of the ways of doing this is by trying to encourage R&D limited partnerships, cooperative R&D partnerships with one of our main science and technology resources—namely, the Federal laboratory system which contains one-sixth of all the science and engineering talent in the United States, and spends roughly \$18 billion of Federal money every year. Capturing a small fraction of that in terms of joint partnerships with industries that traditionally have not had the capability, corporation by corporation, to invest in the basic research necessary to increase their technology will give a large payoff, I believe. And the steel initiative recently started as a result of the President's Commission on Industrial Competitiveness and OSTP, I believe, will act as a model for such mutually beneficial true partnerships between the Federal laboratory technological expertise and our basic industries.

Senator GORTON. One final question.

How does each of you see OSTP relating and interacting with the Congress, and especially the committees which deal primarily with science policy?

Dr. BULKLEY. Well, I think it is essential that the executive branch and the Congress work very closely, hand in hand, not just on dollar figures in the budget, but more specifically on priorities and on priority setting. There is a great deal of scientific expertise in the Congress and in particular within the science committees of both Houses of Congress. OSTP is like a think tank, with a staff which is not enormous and intentionally so, and covers a broad range of issues. The breadth is both a problem as well as a strength in the office, as it is one place in the executive branch where one has the opportunity and responsibility to view broadly the vast range of scientific involvements of the assorted Federal agencies.

To this extent OSTP is perhaps closer to a congressional committee from an intellectual point of view. It's responsibilities are more similar to congressional science committees that are charged with overseeing science, rather than the agencies which tend to have their own very targeted mission and do not look as broadly across the many areas of science and technology.

So I think that an intellectual exchange, as well a practical working relationship between OSTP and the Congress is important. I think that in a very real sense science transcends party politics. Science policy is something that we all have to work on together.

So I think that this interchange is vital, and I think one of the advantages of this confirmation process is the opportunity to have full recognition of the importance of OSTP's relationship to Congress.

Dr. McTAGUE. I think, happily, science and technology policy is a truly bipartisan issue. One of the things that I have been struck by more and more since I have been in this town is the great importance of communication at all levels, both from our point of view with respect to the Federal agencies' task, which is for us to coordinate and make sure there is a coherent science policy, and with respect to Congress where we share a mutual responsibility for budgets and priority settings.

I believe that communication is quite good on both levels. As with all human endeavors, they could be improved. And as with Dr. Bulkley, I believe that your taking the time today to discuss these matters with us is an important step in this direction.

Senator GORTON. Thank you both. In connection with that set of statements, two of the members of this committee, Senator Hollings and Senator Heflin, also have written questions which we will submit to you.

With that, I should like to thank you for your contributions here today and say that I am highly impressed with both nominations.

Thank you very much.

Dr. BULKLEY. Thank you, Senator Gorton.

Dr. McTAGUE. Thank you, Senator.

Senator GORTON. Now we will move on to Mr. Bragdon. Mr. Bragdon, you may proceed. We will be happy to hear from you.

STATEMENT OF CLYDE A. BRAGDON, JR.

Mr. BRAGDON. Good morning, Mr. Chairman.

As the President's nominee for Administrator for the U.S. Fire Administration, I am certainly most honored by that nomination, which affords me an opportunity to continue my life's work and dedication to countering and confronting the destructive forces of fire.

In the fall of this year, the U.S. Fire Administration, as well as its companion institution, the National Fire Academy, will complete its first decade since authorization. The initiatives established by Congress were to reduce the unacceptable loss of life, injuries, and property losses inflicted by fire in this Nation.

As a practitioner I have had the opportunity to observe the results of these initiatives: Fire deaths have decreased; property losses from fire have been stabilized; public awareness has been increased through education; and new technology has been developed and applied.

The U.S. Fire Administration has provided—along with a strong constituency support—a very significant Federal focus for the Nation's fire problems. It does not own a fire engine or has it laid a line, but it has made an impact. It has served as a catalyst, a conduit, and a clearinghouse. Its support includes and involves the talent and commitment of the Nation's fire community and its supporters: professional fire organizations, private fire associations, fire departments large and small (career and volunteer), fire chiefs

and firefighters by the legion, and political leadership at the Federal, State, and local levels.

Exemplary programs developed in concert with and implemented by the fire community and related interest groups include the development and promotion of smoke detection equipment, the development and expanded applications of fire sprinkler technology, community master planning for fire protection, emergency medical service in the fire community, awareness programs through public education, significant fire prevention and arson programs, and data collection and analysis.

Presently, the Fire Administration is organized along the lines of functional program areas which maintain the flexibility for adjusting to new program needs and mandates. Significant among its current initiatives is its emphasis on developing a stronger private/public sector partnership in support for the development of community based volunteer fire prevention efforts, the research and demonstration of new fire sprinkler technology in residential applications, improving data collection and analysis methodology, and protecting of the firefighter in his work environment.

Based on my experience and perceptions, my projections for future program area emphasis for the Fire Administration which will enhance and extend its objectives are as follows:

First, there is a need to evaluate all program areas—past and present—and give priority to those with the greatest potential pay-offs.

Second, we need to concentrate all applicable programs to those identified target areas where the multiple loss of life is occurring.

Third, relationships with other Federal agencies involved with fire issues need to be expanded and engendered to reduce redundancy and enhance the Federal purpose.

Fourth, the dialogue with fire service organizations, public and private, must be sustained so that we fulfill our common goals and objectives.

Fifth, the continuing high rate of deaths and injuries to our Nation's firefighters is not acceptable and must be better addressed through health and safety programs.

And, sixth, the topical concerns of hazardous materials; their combustion, toxicity and effects on the firefighter's work environment will remain a priority concern.

Fire protection in this country was initially founded as a reactive response system. Those organizations and individuals must be credit, who over time and with persistence through prevention efforts, have given fire protection a proactive stance. The most effective prevention payoffs of public education and persuasion must be expanded and exploited in a variety of approaches to address all audiences.

The attitude of the American public regarding fire safety needs to be more closely examined so as to determine any negative distinctions as compared to the foreign experience. The underutilization of the greatest potential resource in the fire prevention effort, the public at large, must be aggressively addressed in order to expand public involvement and commitment.

The fire community needs to accept and recognize its expanded role in our modern world and provide leadership in the broader dis-

cipline of emergency management. The Director of the Federal Emergency Management Agency, Louis O. Giuffrida, dedicates a significant amount of his agenda to the issues of fire and fire safety. He is sincerely committed to the mandates set forth within the U.S. Fire Administration. He has established several initiatives actively involve the fire community in the entire spectrum of the agency's emergency management programs. Director Giuffrida has further directed a significant role for fire in the unifying agency initiative known as the Integrated Emergency Management System. I look forward to working with Director Giuffrida as a part of his agency team.

Given the dynamics of our society, the presence of fire as a negative and destructive force must be continuously and aggressively addressed. The impact of fire on our persons and our built environment must be minimized because of its effect on our quality of life. In conclusion, we as public officials—both elected and appointed—have no greater obligation than the safety and well being of our citizens and the protection of their property.

That is the end of my statement, Mr. Chairman. I would be glad to answer any questions you might have.

Senator GORTON. You set out a number of priorities and concerns that you have, but if you had a number one most significant single fire problem in the United States, what would it be, and what do you think the Federal Government can do to minimize it?

Mr. BRAGDON. My priorities include an initial focus on the technology and talent we have in the Federal Government to address those areas which experience multiple fire deaths. Those areas are the inner cities and some rural areas of the country. The Fire Administration is, in fact, addressing that now through the Community Based Volunteer Fire Prevention Program which involves the States, local communities, and the private sector.

I think we need to proceed with demonstration projects utilizing the new sprinkler technology and advanced smoke detection systems in similar applications.

Senator GORTON. Why does the United States rank a dubious first of the free world in fire deaths and property loss?

Mr. BRAGDON. I have my own opinion on this state of affairs, and I believe that is something we should approach rigorously. I think, as much as anything, it is one of attitude, perhaps even public indifference, which could be countered by increased public education efforts. We frequently hear the refrain: "Well, insurance took care of it all." This is a luxury that may contribute to or very different attitude toward fire. In some foreign countries, many fire accidents are considered crimes for the impact they have on neighborhoods and the indigenous economies. I think we have an attitudinal failure in this country. It is an area needing closer scrutiny to the future.

Senator GORTON. In what areas is progress being made most significantly, and what is the reason for that progress?

Mr. BRAGDON. Progress, sir, by the Fire Administration, or just in general?

Senator GORTON. Fire loss reduction.

Mr. BRAGDON. Fire loss reduction? Given the fact that 10 years ago when the Fire Administration was in its infancy it was citing

fire deaths in this country in excess of 11,000 to 12,000 people. And, such fire data was not very sophisticated at that time.

I think public education has had a major impact on smoke detection itself. Surveys indicate they are installed in approximately 70 percent of all American homes. This has had a major impact toward contributing an early warning so that people can evacuate their residences in time of fire.

Senator GORTON. What is your view of the importance of the fire data analysis activities in the Fire Administration?

Mr. BRAGDON. There is no national data system. The one in place right now is a volunteer system with approximately two-thirds of the States participating. In addition to State participation, there is a data collection difficulty. In this information age, obviously we need a more solid data base from which to make meaningful policy decisions in regard to these important issues of fire safety.

I think we have gone a long ways toward collecting data. However, the Fire Administration is also in competition with the private sector which collects data. We should meld these goals and operations into a single kind of system. But more than that, we need to have a better incentive for local governments and the States to collect data where they do not. We should have a more significant and coordinated data collection system in this country.

Senator GORTON. In the past, the Fire Administration had a successful public education program which was disbanded. I understand that the Fire Administration and FEMA still run a Community Volunteer Fire Prevention Program. Is this the only public education area which is planned to be continued?

Mr. BRAGDON. No, sir. In addition to the previous public education program, there is the National Fire Academy which offers courses that teach local fire people methods for constructing local public education programs. The Community Volunteer Fire Prevention Program, which I referred to earlier, will be expanded beyond the original 10 participatory States next year. This is a significant public education program and holds much promise.

I firmly believe in public education. And, there are those areas that need to be further developed.

Senator GORTON. Is there a proper balance between the Fire Administration's current focus on fire fighter health and safety and the need for data analysis and public education?

Mr. BRAGDON. I cannot specifically respond to what the balance would be in terms of budget or commitment at this time.

Senator GORTON. How effective is NFA's training of volunteer fire fighters?

Mr. BRAGDON. Volunteer?

Senator GORTON. Yes.

Mr. BRAGDON. I cannot be accurate as to participation at the Academy. Probably, 15 to 20 percent of the student population at the academy are from volunteer fire departments. However, I have witnessed, the utilization of the Academy and its campus by volunteers from the nearby States when they travel to the Fire Academy for weekend programs. Most volunteers are employed full-time elsewhere, and this State weekend program affords them an opportunity for a special type of training environment uniquely offered at the National Emergency Training Center in Emmitsburg, MD.

Senator GORTON. Do you feel that the National Fire Academy is effective in its current location in the National Emergency Training Center?

Mr. BRAGDON. Yes, I do.

Senator GORTON. Would cooperation between NFA and USFA be more effective if you were more directly involved in NFA's program?

Mr. BRAGDON. Well, the Fire Administration is also located at the Emmetsburg facility with the Fire Academy. There is a continuous dialogue and coordination through joint projects and efforts. It seems to work quite well.

Senator GORTON. To what extent does the Fire Administration work with the FBI with respect to arson?

Mr. BRAGDON. My only knowledge of that, sir, is through the Federal Arson Task Force where both are represented along with several other Federal departments and agencies.

Senator GORTON. Do you think that cooperation is sufficient?

Mr. BRAGDON. I cannot respond to that. I have had no way of assessing the relationship to this point.

Senator GORTON. Representatives of the fire service community indicated concern during our authorization hearings over the past year about the role of local communities in the fire prevention planning process. What is your view of the appropriate role both of FEMA and of local communities in planning a national fire focus?

Mr. BRAGDON. For the Federal fire focus to be effective, there has to be local community involvement along with that of the State. These people ultimately implement the programs. So, there has to be a concerted joint effort at all times between the local communities and the Federal level of Government.

[The biographical sketch follows:]

BIOGRAPHICAL SKETCH OF CLYDE ALBERT BRAGDON, JR.

Address:

Residence: 23710 Lawnside Drive, Newhall, CA 91321.

Mailing: Federal Emergency Management Agency, U.S. Fire Administration, room 407A, 500 C Street, SW, Washington, DC 20472.

Date and place of birth: July 20, 1929, Boston, MA.

Marital status: Married. Dahlia Lorraine (Jones) Bragdon.

Names and ages of children: Craig Alan Bragdon (son) age 30; Randall Eric Bragdon (son) age 29; Scott William Bragdon (son) age 28; Casey Bradbury Bragdon (son) age 25; and Kelly Wayne Bragdon (son) age 24.

Education:

Hamden High School—Hamden, CT, 1943-1944.

West Haven High School—West Haven, CT, 1944-1945.

Shaker Heights High School—Shaker Heights, OH, 1945-1946.

West Haven High School—West Haven, CT, 1946-1946.

Aviation Fundamentals NATTC NAS—Jacksonville, FL, 10/46-1/47.

Control Tower Operators NATTC NAS—Jacksonville, FL, 1/47-3/47.

University of Redlands—Redlands, CA, 9/50-11/50.

Ground Controlled Approach NAS—Olathe, KS, 4/51-7/51.

East Los Angeles Junior College—Los Angeles, CA, 2/54-6/54. Certificate—June 1954.

University of Southern California—Los Angeles, CA, 2/54-6/63. Certificate in Public Administration—June 1960, B.S. in Public Administration—June 1963.

Loyola University—Los Angeles, CA, 1/76-6/76. Certificate—June 1976.

Employment record: (Includes employment record while attending college)

Fireman 8/52-6/56: City of Glendale Fire Department, Glendale, CA 8/52-6/56.

Fireman 6/56-7/57: County of Los Angeles Fire Department, Los Angeles County, CA 6/56-3/84.

Fire apparatus engineer 7/57-4/60.

Fire captain 4/60-9/64.

Battalion chief 9/64-1/70.

Assistant fire chief 1/70-4/73.

Division fire chief 4/73-8/77.

County Forester and fire warden—Fire Chief 8/77-3/84.

Expert consultant 2/84-present: Federal Emergency Management Agency, U.S. Fire Administration, Washington, DC, 2/84-3/84 (part-time), 4/84-present (full-time).

Government experience:

U.S. Navy—Air Traffic Control 8/46-4/50.

U.S. Naval Reserve—Air Traffic Control (active duty) 12/50-4/52.

U.S. Post Office—Clerk and Carrier (part-time) 12/50 and 12/52.

City of Glendale—Fireman 8/52-6/56.

County of Los Angeles—Fireman through ranks to Fire Chief 6/56-3/84.

U.S. Fire Administration—Consultant 2/84-present.

California Emergency Council—Member 1978-present.

California Office of Emergency Services Fire-Rescue Advisory Committee—Member and Chairman 1977-present.

California Legislative Joint Committee on Fire, Police, Emergency and Disaster Services Advisory Board—Member 1981-present.

Governor's Emergency Task Force on Earthquake Preparedness (California) Member—present.

Governor's Task Force on Chaparral Fire and Flood Risk Management (California)—Vice Chairman 1981.

Firescope (Fire Resources of Southern California Organized for Potential Emergencies—a joint federal, state and local government research and operation project)—Member, Board of Directors 1977-1984.

Watershed Fire Council of Southern California—Agency Representative 1977-1984.

Los Angeles County Watershed Commission—Member 1977-1984.

Los Angeles County Fire Services Commission—Member 1978-1982.

California Contract Cities Association—Member 1977-1984.

Los Angeles County Employee Development Management Advisory Committee—Chairman 1981-1984.

Los Angeles County Management Council—Member, Board of Directors, President 1975-1984.

National Advisory Board on Integrated Emergency Management System—IAFC—FEMA—Chairman 1983-1984.

Memberships:

Créscenta—Canada YMCA—Member.

Independent Order of Foresters—Members.

Newhall—Saugus Athletic Club—Board of Directors.

National Firehawk Foundation—Advisory Board.

National Fire Protection Association—Member.

International Association of Fire Chiefs—Member.

Metropolitan Fire Chiefs—Board of Directors.

Western Fire Chiefs Association—Member.

California Fire Chiefs Association—Member.

Los Angeles County Fire Chiefs Association—President.

Foothill Fire Chiefs Association—Member.

Fire Districts Association of California—Member.

California-Nevada-Hawaii Forest Fire Council—Member.

California State Fireman's Association—Committee Chairman.

Southern California Association of Foresters and Fire Wardens—Member.

International Association of Fire Fighters—Retired Member.

Box 15 Club of Los Angeles—Member.

American Society of Public Administration.

University of Southern California Alumni Association.

SCAPA Praetor, USC School of Public Administration.

Los Angeles County Speechcrafters—President.

Political affiliations and activities: Registered Republican since 1950, Sustaining member California Republican Party, and Sponsor GOP Victory Fund.

Honors and awards:

Life membership, California State Firemen's Association.

Honorary Life Membership, Southern California Association of Foresters and Fire Workers.

Honor Graduate, University of Southern California School of Public Administration.

Honorary Membership, American Society of Public Administration.

Public writings: A New Emergency Management Partnership, The International Fire Chief Publication, Vol. 49, No. 9, September 1983.

Senator GORTON. Thank you very much for being with us today.
The meeting is adjourned.

[Whereupon, at 10:50 a.m., the meeting of the committee was adjourned, subject to the call of the Chair.]

NOMINATION—FEDERAL COMMUNICATIONS COMMISSION

THURSDAY, JUNE 7, 1984

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The committee met, pursuant to notice, at 9:30 a.m., in room 253, Russell Senate Office Building, Hon. Barry Goldwater presiding.

Staff members assigned to this hearing: Dale Brown and Marguerite Ayers, professional staff members; and Tom Cohen, minority staff counsel.

OPENING STATEMENT BY SENATOR GOLDWATER

Senator GOLDWATER. The hour of 9:30 having arrived, the meeting will come to order. I am sorry that there are not more members present, but we are quite busy these days on the floor—frankly doing nothing—and it takes more preparation to do nothing than to get something done.

The President has submitted to the Senate the nomination of James H. Quello to be a member of the Federal Communications Commission. Mr. Quello has been nominated for a term expiring June 30, 1991. I might add that this nomination is a reappointment. Mr. Quello has had a very distinguished career in service to his Government, and particularly in service to those people in this country who rely on the FCC for the control of communications.

I am going to ask that a biographical sketch be put in the record.

Also I will announce that the record will remain open for the inclusion of additional questions for Commissioner Quello until the close of business today, in order that he has the opportunity to respond to all questions in a timely manner prior to next Wednesday's markup.

It is a pleasure to have you, Commissioner Quello, and you may proceed in any way that you care to.

STATEMENT OF JAMES H. QUELLO, COMMISSIONER, FEDERAL COMMUNICATIONS COMMISSION

Mr. QUELLO. Thank you, Mr. Chairman. I have an opening statement and a brief summary of our two Temporary Commission on Alternative Financing for Public Telecommunications [TCAF] reports. I summarize these in five pages. These are the two reports to Congress, and with your permission, I would like to submit my

statement and the five-page summary¹ of the TCAF reports for the record.

Senator GOLDWATER. They will be placed in the committee files.

Mr. QUELLO. Thank you, sir. And I have excerpts from my statement that I would like to read, if I may.

Senator GOLDWATER. Go right ahead.

Mr. QUELLO. Thank you.

As you know, I have been privileged to serve at the Federal Communications Commission for the past 10 years. During that time we have been involved in a veritable explosion in technical developments, deregulation, and unregulation which provides new challenges and responsibilities for both the Congress and the FCC.

There have been significant changes and farreaching, oftentimes controversial developments in practically all fields of communications, from FCC radio deregulation—which significantly was supported by the local Federal court—to authorizing many new services.

During the past few years, many of the outmoded or unduly intrusive regulations and unnecessary paperwork were eliminated, particularly in the broadcast area. The FCC also simplified license renewal procedures, and technical requirements in general. Communications regulations were, and are, being replaced by marketplace competition.

Meanwhile, the FCC introduced many additional communications facilities to the marketplace, thus providing expanded service to the public. Among the new services that the Commission promulgated, LPTV or low power television, DBS [direct broadcast satellite], MDS, cellular radio, teletext, AM and TV stereo, cable, SMATV, STV, and continued expansion in the number of FM, AM, and UHF stations.

The current FCC also authorized subcarrier service for radio and TV, and in a very timely and significant action, the FCC also expanded the ways public broadcasters could raise additional funds, thus enhancing self-sufficiency.

Now, I mentioned that I had these two TCAF reports, and they are summarized, but I just want to take this opportunity, Mr. Chairman, to thank you for your leadership in supporting public broadcasting, particularly in your sponsorship of the funding authorization. TCAF and all public broadcasters appreciate the crucial role you are playing, and I hope you can get the bipartisan support so that this much needed and much appreciated legislation can assure that public broadcasting can continue providing a distinctive and distinguished service to the American people.

I wanted you to know everyone appreciates your support for public broadcasting, and I appreciate it.

I want to emphasize that my experience has made me quite aware that the FCC is an arm of Congress. Of course, we are reminded of that at every oversight. And as a member of a regulatory agency, I have tried to be cognizant of the directions of Congress and the needs of the public, as expressed sometimes by the public themselves and by the public's representatives in the Congress.

¹ See statement to House Committee on Energy and Finance, Subcommittee on Telecommunications, Consumer Protection, and Finance, Mar. 29, 1984.

There are many difficult decisions ahead for the Commission, and I believe my previous Commission experience could lend continuity to the ongoing policy issues. I also believe my practical experience, particularly in communications and in the contentious commercial and public broadcast fields, along with my 10 years observing and implementing the various entities in the telecommunications explosion could be helpful as even more new services evolve and new needs are identified.

Overall, it is a challenging and exciting time to be at the FCC, and I think we all have to work together to maintain and increase our communications leadership, so that Americans remain the best informed and the best-served people in the world.

Now, my 10 years are on record. My supporting, dissenting, and concurring statements are there for public scrutiny. And so I think you have a pretty good idea of where I stand.

That is my statement, Mr. Chairman.

Senator GOLDWATER. Thank you very much, Mr. Quello. I can assure that those of us who are associated with the Commission—and I have been associated with it now, I hate to admit, 63 years—appreciate very much the work that you have contributed in the FCC.

I have just a few questions here. You have been at the FCC now for over 10 years. How would you characterize your regulatory attitude or your philosophy?

Mr. QUELLO. Well, my philosophy has been supportive of a competitive marketplace rather than regulation. We have had a proliferation of communications in the last 5 or 6 years, and I have leaned more toward competitive marketplace forces rather than regulation. I do have an open door policy; I hear everyone out.

My philosophy is that I think we should regulate in a spirit of mutual cooperation with the regulated businesses, rather than assume right from the start an adversary role. I think we should reserve the adversary role for egregious cases.

I think progress can best be achieved with a constructive Government attitude that provides incentives for innovation, growth, and improvement in service and products.

The other thing I have to say is that I think one of our highest priorities—Government priorities—must be to preserve America's markets and our own Government position and communications position in world communications, so that we can assure healthy, progressive industries with gainfully employed Americans.

Senator GOLDWATER. Thank you.

You were Chairman of the congressionally created Temporary Commission on Alternative Financing for Public Telecommunications from October 1981 to December 1983. What were the major conclusions of that Commission, and what do you see in the future for public broadcasting?

And I might tell you that just yesterday, Senator Packwood and I agreed on requests of his on the bill to finance public broadcasting that should be called up on the floor, I hope, sometime this week, but certainly before we go out for the July 4 recess. So you can answer that question.

Mr. QUELLO. Well, Senator, you are addressing the principal need of public broadcasting, and that is Federal funding. Now, TCAF ex-

amined 33 different options, and we examined them very carefully, and we came up with the conclusion that these other funding sources would be supplemental, not alternative; and that to preserve the character of public broadcasting, which is a relatively commercial free service, and to preserve its viability, Government funding would have to be the very first priority.

The other thing Congress could do—and I think you are considering doing it—is to eliminate the unrelated business income tax. As you know, public broadcasting has to pay taxes on any additional source of revenue unrelated to broadcasting, such as teletext or rentals or SCA's. Additionally, there is a double penalty in that the tax on money treated as unrelated business revenue is subtracted from the grant they get from CPB. And so I think it would be a very helpful incentive to self-sufficiency if Congress could get rid of that unrelated business income tax. But the all important need is Federal funding.

The FCC took a significant step to enable public broadcasting to raise supplemental funds by authorizing product identification in enhanced underwriting. This was enacted after receiving the letter from you and Chairman Wirth recommending such action. Enhanced underwriting is helping, and I think will help more in the future.

Senator GOLDWATER. I could not agree with you more. I think one of the big needs in this Federal financing for public broadcasting is in the modernization of their rather antiquated equipment. We have not had any real appropriations for that in a long, long time.

I look on public broadcasting pretty much as you do. It is sort of the white hope in this country in decency on the air. I have given up on the networks. I do not think they understand what the American public would like to see, and I think that public broadcasting—not 100 percent, but certainly to a great extent—does have that quality.

The FCC recently released a notice of inquiry concerning the Fairness Doctrine. Also, Senator Packwood has sponsored and I have cosponsored legislation that would do away with both section 315 and the Fairness Doctrine. What would be your position on these issues?

Mr. QUELLO. Well, I have a longstanding record of advocating the abolition of section 315 and the Fairness Doctrine. I appeared before Chairman Van Deerlin's committee; I also appeared before the Senate committees, and made rather lengthy statements at the time. I believe with the proliferation of media we have today, broadcasting should be granted full first amendment constitutional freedoms of the press and of speech.

However, in the recent FCC inquiry, I did mention that the Fairness Doctrine encompassed in a statute, and hence, is more a prerogative of Congress than the FCC. The Commission should have a very neutral inquiry to find out from legal and legislative experts what they think about the Fairness Doctrine as it applies to communications today.

I have here a list of questions contained in the FCC inquiry. I think the record ought to reflect them. The questions are: Is the intention of the Fairness Doctrine necessary to ensure the public's

access to diverse ideas and viewpoints? To what extent should the Commission be concerned about the bias that may result without the Fairness Doctrine? Is it appropriate to impose fairness obligations on broadcasters, when other owners or other types of media are not subject to such constraints? Does the Fairness Doctrine really encourage robust and wide-open debate of public issues? And is the Fairness Doctrine mandated by the Communications Act?

There is a question on whether the Fairness Doctrine is mandated or not. My presumption is that it is, and there would be a burden of proof that it is not. Years ago, I was a broadcaster. I could live easily with the Fairness Doctrine and section 315. But I think today, in my opinion, it doesn't belong there. Other people have other opinions, and I think we have to give all viewpoints very careful consideration.

Senator GOLDWATER. Would you like to question now?

Senator RIEGLE. Thank you, Mr. Chairman.

Actually, I wanted to come over to make a statement in behalf of this Commissioner, the nominee, because of his background in Michigan and the fact that we are enormously proud of him in our State. I think he brings not only a proven record of lengthy service that all can look at and evaluate, but he brings other qualities of professionalism and fairness. I know of no nominee where I have heard over a period of years more supporting comments from diverse kinds of people than I have for Jim Quello.

And I think it is a real measure of his capacity and his even-handedness that, while obviously he can't be in agreement with all groups at all times, nevertheless, he has very broad support among groups throughout our State and throughout the country, groups that are at odds with another.

So I think that is a measure of his tremendous ability to listen, to evaluate, and to reach a fair judgment. And I think that is the ultimate test of a public servant, and one that I think he has met with distinction.

He is diligent, he is hard working, he is creative and, as I say, scrupulously fair. So we are very proud of him in Michigan. We are proud of his background. I think you might know that anybody who served as the publicity manager for the Lone Ranger program for one of the stations out there back in the midforties has got to be a straight shooter, like you, Mr. Chairman, and he is.

So I am just proud to see him nominated, and I am delighted to come and support his nomination here today.

Mr. QUELLO. A real thank you. You are a very pleasant surprise, and I appreciate getting support from my home State from such a respected source. Thank you, sir.

Senator GOLDWATER. I will say Kemo-Sabe to that.

Well, I share a little bit, in a distant way, the pride of Michigan in this man, because I courted my wife in Charlevoix when she was going with Soapie Williams. So I have been raised on competition.

Senator RIEGLE. I did not know that. That is an interesting story.

Senator GOLDWATER. Oh, I knew Soapie when he was president of the Young Republicans of Princeton.

Senator RIEGLE. Well, after you spirited away his girlfriend, is that when he changed parties?

Senator GOLDWATER. Something happened.

What are your views on the upcoming changes in the multiple ownership rules? Where is the Commission headed on ownership issues, and how do you think this will serve the public interest?

Mr. QUELLO. Well, I have always advocated diversity of ownership, but I think you are referring to the 7-7-7 rule, which is getting to be quite controversial. But you have to remember that this rule was promulgated 30 years ago. The question might come up in people's minds that if 7-7-7 was appropriate 30 years ago, would 10-10-10, or 11-11-11, or 12, or whatever, be a little bit better to meet the needs of 1984.

We have an ongoing proceeding at the Commission examining this issue. There has been some minority objections we will have to address.

So again, I have to give you the classic answer. It is an ongoing proceeding. I am going to examine both sides and see what we can come up with. And that is pretty much my position—I think we should reexamine it, though, because it has been 30 years.

Senator GOLDWATER. I have often wondered if this subject should even come under the FCC consideration. I do not know exactly who might consider it, but—

Mr. QUELLO. Antitrust possibly.

Senator GOLDWATER. Pardon?

Mr. QUELLO. Antitrust.

Senator GOLDWATER. Well, antitrust; judiciary. I do not know whether it is more of a judicial question than a communications question, but it will be interesting to see what you fellows come up with.

As you are aware, I sponsored S. 66, the first comprehensive cable bill ever introduced. What are your views on cable deregulation? What action do you think the Commission will be taking in the near future in this area?

I might say that we are very hopeful that the House will come to some decision on the Senate bill or their own bill rather soon. They have reached another agreement with the League of American Cities. And having been doublecrossed by them quite a few times, I just hope they will stick by their word this time so we can get some comprehensive cable legislation out.

But if it falls back on the FCC to get into this general area because of the lack of legislative fiat, what would be your opinion?

Mr. QUELLO. Again, you are out front, you with your bill S. 66. I certainly supported the thrust of your bill, and I am glad to see that the cities and the cable systems have come to some agreement. I feel there is a need for uniformity and stability in national cable. You cannot have someone paying 3 percent, someone paying 25 percent, or every time a local council needs money, finding it rather convenient to go after a cable system.

So I do think they need the stability that Federal oversight can provide. I have been quite deregulatory with cable. I came in 10 years ago, coming from broadcasting, with cable people wondering about me, but I was actually endorsed by the Michigan cable people and a number of State cable associations. I have been endorsed again this year by a number of State cable associations.

So I think I am very openminded on cable. They need the stability, and I think they could do well at the FCC, Mr. Chairman, and I

think as a sponsor of S. 66, you would be rather pleased with what I hope the FCC could come up with.

Senator GOLDWATER. Thank you very much.

Do you have some other questions?

Senator RIEGLE. No; not at this point.

Senator GOLDWATER. Well, again, I have to apologize for the absence of a quorum, so we cannot take a formal vote. I am sure that you are going to be reconfirmed. I do not think there is any question of it.

So I want to thank you for coming down. It was a pleasure to meet your charming wife, and a pleasure to have a brief discussion with you.

Mr. QUELLO. Thank you, Mr. Chairman. I appreciate it.

Senator GOLDWATER. I want to thank you again on behalf of all people in the communications industry and business and the American public for what you have done for this subject.

I might observe that I do not think there is any one field that we are experiencing today that will see more improvement than the communications field. It is almost impossible to understand or comprehend the improvements that are coming so rapidly, that as you know, it is almost impossible to keep up with them.

Mr. QUELLO. Mind boggling at times. And there are no perfect answers to some of these problems. We just do the best we can.

Senator GOLDWATER. I know the problem you are having with the new telephone system and having to issue licenses by lottery. It is probably the worst way in the world to do it, but there is no better way because if we did not do it that way, I think we would spend the rest of our years in court being sued.

Mr. QUELLO. Right.

Senator GOLDWATER. Well, thank you for coming. It has been a real pleasure having you.

Mr. QUELLO. Thank you, Mr. Chairman.

[The statement, biographical sketch, and answers to questions of the committee follow:]

STATEMENT OF JAMES H. QUELLO, COMMISSIONER, FEDERAL COMMUNICATIONS
COMMISSION

Thank you Mr. Chairman. With your permission, I'd like to present a brief opening statement.

As you know, I have been privileged to serve at the Federal Communications Commission for the past ten years. During that time we have been involved in a veritable explosion in technological developments, deregulation and unregulation which provides new challenges and responsibilities for congress and the FCC. There have been significant changes and far-reaching, oftentimes controversial, developments in practically all fields of communications—from FCC radio deregulation (which, significantly, was upheld by the federal appellate court) to implementing Computer II and enacting revised regulations for the newly structured telephone industry.

During the past three years many outmoded or unduly intrusive regulations and unnecessary paperwork were eliminated, particularly in the broadcast area. The FCC also simplified license renewal procedures and technical requirements. In general, communications regulations were, and are, being replaced by marketplace competition. Meanwhile, the FCC introduced many additional communications facilities to the marketplace, thus providing expanded service to the public. The Commission promulgated new or expanded service in: LPTV (low power television), DBS (direct broadcast satellite), MDS (multipoint distribution service), cellular radio, teletext, AM and TV stereo, cable, SMATV, STV and continued expansion in the number of FM, AM and UHF stations. The current FCC also authorized subcarrier service for

radio and TV. In a very timely and significant action, the FCC also expanded the ways public broadcasters could raise additional funds, thus enhancing self-sufficiency.

With a few exceptions, I strongly supported the deregulatory thrust. My position on key policy issues is a matter of public record. In the more significant policy cases, my position has been emphasized by supporting, concurring or dissenting statements that have been available for public scrutiny.

During my present term, I was honored by the opportunity to serve as Chairman of the Temporary Commission on Alternative Financing for Public Telecommunications (TCAF) from October 1, 1981 to December 1, 1983.

Before I briefly summarize the work of TCAF, I want to take this opportunity to personally thank you, Mr. Chairman, for your leadership in supporting public broadcasting—particularly in your sponsorship of the much needed authorizing legislation for public broadcasting. TCAF and all public broadcasters appreciate the crucial role you are playing in funding public broadcasting at levels that will ensure that a distinctive and distinguished service continues to be available to the American people.

As you know, Congress established TCAF in 1981 because of its concern with the critical financing problem facing public broadcasting. That action constituted the first time in the history of public broadcasting that a special commission was established by statute to thoroughly consider all fundamental financing strategies for public broadcasting.

The legislative mandate to the new TCAF commission was both broad and specific. It sought answers to questions that have perennially surrounded public broadcasting support. It invited new ideas, it authorized an advertising demonstration program and it sought direction. The first report thoroughly examining 33 various funding options was submitted to Congress June 30, 1983. The second report on the results of the advertising experiment along with TCAF's recommendations was submitted to Congress October 1, 1983. I have summarized these two significant documents in a report submitted to Congress. I'd appreciate making this summary a part of the record of this hearing.

As you know, TCAF generally found that none of the alternative funding possibilities could replace the traditional funding procedures to preserve the character and viability of the existing public broadcasting system. Most of the 33 various funding options that were analyzed represented supplemental rather than alternative funding. Also, there were no substantial alternatives that could have been effectively in place for the next three years and no preferable alternative in the foreseeable future. In conclusion, the proposed funding legislation is right on target and American TV service will greatly benefit if public broadcasting receives the bi-partisan support in Congress it needs and deserves.

My general approach to communications policy is pro-competitive. I usually believe marketplace solutions are in most cases better than regulatory ones. I supported most of the current efforts to discard excess regulatory baggage. It is frequently too easy for regulation to acquire a life of its own and to continue when the need has passed. However, I will question any deregulatory action that might ultimately reduce the quality of telecommunications services available to the public. In particular, this agency must guard against elevating administrative convenience to a point that jeopardizes our ability to ensure proper technical standards and operations. Also, I believe that with deregulation comes added responsibility to strongly enforce congressional statutes and remaining regulations and to monitor the telecommunications environment to ensure quality of service in the public interest.

I do believe government regulation is best conducted in a spirit of mutual cooperation with regulated industries. I believe progress can best be achieved with a constructive government attitude that provides incentives for innovation, growth and improvement in service and products for the public. We should reserve adversary proceedings for major unresolved disagreements or egregious violations. In return, we should expect that telecommunications companies, because of their great impact on the American way of life, maintain a strong sense of social consciousness.

Broadcast licensees, and for that matter all businesses and corporations, have inherent responsibilities as public trustees. In America, all corporations exist by the will of the people. It behooves all corporations, acting in their own self-interests, to conduct themselves with a keen sense of social purpose, not only economic purpose. I believe the free enterprise or corporate system works in America, but I keep reminding myself that it was not ordained by God . . . In a democracy, any economic or social system can be legally altered by the people at the polls. So, the people have a right to expect reasonable benefits, enlightened management, fair treatment and equitable distribution of wealth for the public good. The great majority of American

telecommunications and broadcasting corporations have reasonably fulfilled most expectations by providing the American people with the best communications services in the world and its employees with a high standard of living. One of our highest government priorities must be to preserve America's markets and our preeminent position in world communications to assure healthy, progressive industries with gainfully employed Americans.

I'd like to emphasize that my experience has made me quite aware that the FCC is an arm of Congress and rightfully subject to oversight. As a member of a regulatory agency, I have tried to be cognizant of the needs and interests of the public and to act responsibly on issues articulated by the public's elected representatives in Congress.

There are many difficult decisions ahead for the Commission and I believe my previous Commission experience could lend continuity to ongoing policy issues. I also believe my practical experience in communications, particularly in the contentious commercial and public broadcast fields, along with my ten years of observing and implementing the various entities in the telecommunications explosion, could be helpful as even more new services evolve and new needs are identified.

Overall, it's a challenging, fascinating time to be at the Federal Communications Commission. We must all work together to maintain and increase our communications leadership so that Americans remain the best informed and best served people in the world.

BIOGRAPHICAL SKETCH OF JAMES HENRY QUELLO

Address: 6101 W. Edsall Road, Alexandria, VA 22304.

Date and place of birth: April 21, 1914, Laurium, Michigan.

Marital status: Married—to Mary Elizabeth Butler in 1937.

Names and ages of children: Two sons—James, 45 and Richard, 41.

Education: Michigan State University, BA degree 1935; attended two-week training course—Command and General Staff School, Fort Leavenworth, Kansas.

Employment record: Newscaster, WKAR, and Editor, Michigan State University, 1934-35; Publicity Manager, Michigan TB & Health Society, 1935-36; Remington-Rand Salesman, 1936-37; CCC Company Commander, 1938-40; U.S. Army, 1940-45 (Lt. to Lt. Colonel); WXYZ, Publicity Manager, Lone Ranger Programs, 1945-47; WJR, 1947-1964, serving successively as Public Relations and Advertising Manager, Program and Public Affairs Manager, Operations Manager; General Manager and Vice President (1960-64). (WJR was acquired by Capital Cities Broadcasting Corporation in October, 1964.) Station Manager of WJR Division, Capital Cities Broadcasting Corporation, 1964-1972; Vice President, Capital Cities Broadcasting Corporation, July, 1969 to September, 1972; Retired 1972 to 1974; Federal Communications Commission (Commissioner), 1974 to present.

Government experience: Detroit Housing and Urban Renewal Commission, 1951 to 1973—served as president four different times (appointed by four different Mayors) Board of Trustees of the Michigan Veterans' Trust Fund, 1951 to 1974 (appointed by four different Governors). Lieutenant to Lt. Colonel in U.S. Army, Sept. 1940 to Nov. 1945—32 months overseas with 9th Infantry Division and 45th Infantry Division.

Memberships: Former member of the Governor's Special Commission on Urban Problems, Governor's Special Study Committee on Legislative Compensation, Mayor's Committee on Human Relations; Assistant National Public Relations Chairman for the VFW; TV-Radio Chairman of the United Foundation; executive board member of the Boy Scouts of America; Board of the American Negro Emancipation Centennial. Member of the Detroit Adcraft Club and the Detroit and National Press Clubs. Former member of the Greater Detroit Board of Commerce and the Michigan Chamber of Commerce; former president and director of the Michigan Association of Broadcasters; member of the Broadcast Pioneers from 1959 to 1972; former member of the National Association of Broadcasters and NAB National Radio Code Board for two terms. Also served as Director of the Detroit Safety Council, Michigan Director for the March of Dimes, and advisory committee member of the Detroit Hospital Council. From 1970 to 1972, taught courses in "Broadcast Management" and "Practicalities of Government Regulations" at the University of Detroit.

Political affiliations and activities: No offices in political parties. Financial contributions attached.

Honors and awards: Michigan State University Distinguished Alumni Award; Northern Michigan University Honorary Doctorate Degree of Public Service; Michi-

gan State University Honorary Doctorate of Humanities; VFW Distinguished Service Award; VFW Ernie Pyle Award; Michigan State Legislature Distinguished Service Resolution; Recipient of first WGPR William V. Banks Award (WGPR is the first Black-owned TV station in America); Central Educational Network Distinguished-Service Award; National Association of Public Television Stations' Public Television Commendation.

Published writings: No books—occasional routine articles submitted to broadcast trade publications upon request from 1974 to 1984 (i.e., TV-Radio Age, Broadcast Daily), several copies attached.

QUESTIONS OF SENATOR GOLDWATER AND THE ANSWERS THERETO

Question. Several years ago, Congress passed a law giving the FCC authority to determine utility pole attachment rates, that is, the rates that electric and telephone utilities may charge cable television operators for the right to use and occupy the utility's poles. The FCC implemented that authority by establishing a rate formula for determining such rates. The utilities believe very strongly that the rate formula established by the FCC no longer reflects current conditions, fails to allocate costs fairly, and ought to be revised. They have asked the Commission to institute a rulemaking proceeding to examine this issue.

Would you be willing to look into this matter and give it your careful consideration?

Answer. I will be very happy to give full consideration to this matter. I am informed by our Common Carrier Bureau staff that it should be ripe for consideration by the Commission next month. I am aware of the issues which have been raised and I will carefully evaluate the arguments presented before taking any action.

Question. would you work with my staff and follow up on the matter?

Answer. I will be happy to work with your staff on this matter. If there are any questions about status or timing, I will try to assist in any way I can.

QUESTIONS OF SENATOR HOLLINGS AND THE ANSWERS THERETO

Question 1. What is your regulatory philosophy, and how will it serve the public interest?

Answer. My regulatory philosophy is one that is generally supportive of competitive market forces over regulation. I believe regulation is best conducted in the spirit of mutual cooperation with the regulated industries. I also believe that progress can best be achieved with a constructive government attitude that provides incentives for innovation, growth and improvement in services and in products. With this philosophy, the FCC must also provide reasonable opportunities for new entry. In return, we should expect that telecommunication companies maintain a strong sense of social consciousness. Additionally, one of our highest government priorities must be to preserve America's market strength and our preeminent position in world communications to ensure healthy, progressive industries with gainfully employed Americans. I believe my philosophy will serve the public interest by creating the best service to the most people at the most reasonable cost.

Question 2. How important is the entry of new services to accomplishing this philosophy?

Answer. The entry of new services in a timely and appropriate manner is necessary to accomplish my regulatory philosophy. As new services enter into the marketplace, competition among new and existing services will develop. I am a believer that through competition service providers will be more responsive to the needs of the public. I also believe that new services must be introduced in a timely and orderly fashion so as not to create interference with existing services.

Question 3. How would you encourage the entry of new services and new service providers?

Answer. Generally, we should remove barriers to entry and expedite processing of applications and grants. For example, I supported rule changes that created the use of FM subcarriers, TV stereo, teletext, LPTV multipoint distribution services, direct broadcast satellite and AM stereo. Overall, I believe the Commission's goal of spectrum efficiency provides the opportunities for new services to come into existence where previously they could not. I also encourage the entry of new services and new service providers with minimal regulatory responsibility at the onset. However, as new services mature we must track their progress to determine how these services and our overall policies best serve the public need.

Overall, my philosophy has been to encourage entrepreneurs' ability to create and expand their services free of regulatory restraints. Such a philosophy, I believe, goes a long way to encourage the entry of new services and new service providers. Currently, at the Commission, efforts are being made to reduce the backlog of applications for license to offer new services. Facilitating the application process will continue to be an important issue on my agenda.

Question 4. Do you support ownership and cross-ownership requirements?

Answer. Generally, I do support ownership and cross-ownership requirements currently in place at the FCC. I do believe, however, that perhaps one of the most important rulemakings now pending before the Commission is the proposal to modify the so called "7-7-7" rule. These limits on multiple ownership of broadcast stations are over 30 years old, and thus, date from a time when the communications marketplace was vastly different. I think it is very reasonable for the Commission to take another look at this rule to explore whether these are appropriate limits in today's marketplace. The important issue in our ownership rules is to insure diversity of voices. The duopoly and one-to-a market rules are particularly important to ensuring diversity and competition in the marketplace of ideas.

Question 5. In establishing ownership requirements in the broadcasting industry, do you believe the three major networks are sufficiently different from other station owners such that they may require different regulatory treatment?

Answer. The issue of the three major television networks being sufficiently different from other station licensees is not a new issue at the Federal Communications Commission. To begin with, we do not regulate the networks. However, as licensees of television stations the networks are treated like any other licensee. Unlike other licensees, the networks are in a unique financial position. Their financial strength and the strength of their affiliates have caused some concern with regards to any action that we take in the area of multiple ownership rules. The Notice of Proposed Rulemaking on the 7-7-7 Rule issued by the Commission in late 1983 expressly seeks comments with regards to networks versus other broadcast licensees in regard to economic strength, and audience reach. I will review the record carefully with this specific issue in mind.

Question 6. What do you see at the relationship between ownership requirements in the broadcasting industry, such as the 7-7-7 Rule, and ownership of stations by minorities?

Answer. One of the issues resulting from our Notice of Proposed Rulemaking with regards to the 7-7-7 Rule is the possible impact this rule or any modification of this rule may have on the ownership of stations by minorities. It is important to realize that many of the licensees who hold the maximum number of broadcast licenses are in fact publicly traded corporations and as such minorities, as any other segment of our society, can participate in their ownership. The issue of how modifications in the 7-7-7 Rule may impact on ownership of stations by minorities will certainly receive my full attention in staff recommendations with regards to this rulemaking. I also believe that modifications to the rule of 7's must be examined with regards to diversity of voices in addition to opportunities for ownership.

Question 7. Do you support the FCC's policies developed over the past decade which have encouraged minority ownership? In particular, do you support the distress sale policy? The tax certificate policy? The additional credit or preference for minority applicants in comparative hearings for new licenses?

Answer. I have supported in the past and I continue to support the FCC's policies developed over the past decade that have encouraged minority ownership. I have especially supported the distress sales policy, the tax certificate policy and the additional tax credit on preference for minority applicants in comparative hearings for new licenses. I also believe it is important to understand that minority ownership should not necessarily be associated with a constituents minority audience or a community of license. It is important that minority ownership be made available across the board and across communities.

Question 8. What steps would you take to improve and expand the existing minority ownership policies, including to other services within the FCC's jurisdiction?

Answer. I believe there are a couple of important ways in which to improve and expand the existing minority ownership policies. First, I believe there should be continued and improved efforts on behalf of the telecommunications industries to improve minority ownership. A case in point is the efforts by the National Association of Broadcasters to provide financial assistance to minorities for the purpose of acquiring stations. I feel such industry efforts are important and perhaps most directly responsive to the needs of minorities. At the Commission we can continue to enforce our minority ownership policies. Additionally, we may want to examine how these policies should be imposed on new telecommunication services. We also must

review the requirements for entry to ensure that minorities have access to telecommunications services. Finally, with the development of new technologies we can provide opportunities for minority ownership.

Question 9. Do you support the continuation of FCC regulation of industry EEO practices? What steps would you take to improve industry EEO regulations? Do you support increasing the threshold for requiring the filing of FCC Form 395?

Answer. I do support the continuation of the FCC's regulation of industry EEO practices. My record at the Commission demonstrates my strong belief and compliance with the Equal Employment Opportunity laws of this country and I continue to support present FCC regulations with regards to EEO practices. As a former broadcaster I can also lend my full support to affirmative action programs developed by the industry to recruit qualified minority applicants. I believe the first step necessary to improve industry EEO regulations is to enforce the regulations that are on the books. With respect to increasing the threshold for filing Form 395 above five employees, I believe this warrants special consideration before any changes are made. The Office of Management and Budget in response to the Paperwork Reduction Act has asked the Commission to remove the requirement that Form 395 be submitted to the FCC. OMB believes this form should be maintained at the station and if there are questionable minority practices, then this form can be submitted as part of the record. The Commission has asked for and received permission by OMB to continue to require licensees to submit their EEO Form 395, and I believe this is an appropriate requirement necessary to evaluate industry EEO performance.

Question 10. What steps would you take to improve internal EEO within the Commission?

Answer. I believe it is not only important to recruit qualified minority applicants to the FCC but also it is important to promote from within. The most current FCC employment data indicate that approximately 48% of the Commission's staff is female, and approximately 33% of its staff is minority. I supported Commission efforts in the past with regards to its internal EEO program and I pledge I will continue to play a strong role in this area.

Question 11. Have you ever voted in favor of a Commission order that stated that the Fairness Doctrine is a statutory requirement?

Answer. Yes. I have supported many orders which either stated, or strongly implied, that Fairness Doctrine has a statutory basis.

Question 12. Have you ever stated in a speech, article, testimony before Congress, or elsewhere that the Fairness Doctrine is a statutory requirement or that legislation is required for its repeal?

Answer. I have often publicly stated my view that the Fairness Doctrine was codified by the 1959 amendment to the Communications Act. On April 11th of this year, I issued a statement accompanying a Notice of Inquiry on the Fairness Doctrine in which I said: "The Commission has long acquiesced in the view that the 1959 amendments to the Communications Act did effect a codification of the doctrine, and I believe that the burden of proof rests on those who seek to change this status quo." (Copy of statement attached.)

Question 13. Have you ever voted in favor of a Commission order that stated that the spectrum is scarce or limited?

Answer. I have voted in favor of many Commission orders that stated or strongly implied that spectrum is a limited resource. From Docket 18262, which reallocated spectrum from UHF television to land mobile services, to authorization of Direct Broadcast Satellite service requiring certain terrestrial microwave licensees to move to other spectrum, all of our allocation and re-allocation orders at least imply that the spectrum is limited.

Question 14. In 1981, Chairman Fowler and three other Commissioners, including yourself, asked Congress to repeal the Fairness Doctrine. In submitting this recommendation to Congress, the Chairman stated, "I recognize that it is Congress which must ultimately resolve the complex issues presented here." Do you agree with the Chairman's statement that repeal of any part of the Fairness Doctrine must be left to Congress.

Answer. Section 73.1910 of the Federal Communications Commission Rules and Regulations states: "The Fairness Doctrine is contained in section 315(a) of the Communications Act of 1934, as amended, which provides that broadcasters have certain obligations to afford reasonable opportunity for the discussion of conflicting views on issues of public importance." I support that interpretation and agree that repeal of the Fairness Doctrine can only be effected by Congress.

Question 15. Do you continue to favor an access charge scheme that shifts costs to the end user regardless of use?

Answer. I will certainly consider any reasonable pricing plan which appears to support competitive entry in long distance services and which does not contain incentives to bypass the local exchange. However, at this time, I am not aware of any plan, other than customer line charges, which meets both tests. The Commission will take a very comprehensive review of telephone pricing mechanisms late this year after all parties, including the public, are given a full opportunity to comment.

Question 16. Do you think bypass of the public switched network poses a serious threat?

Answer. I am very concerned that bypass can become a very serious threat to universal service. The subsidy which flows from users of long distance services to local exchange customers adds significantly to the rates for long distance services. Prudent business people will continue to seek ways to avoid this added cost and will consider bypass. We have anecdotal evidence that there is considerable bypass now and that many large users have plans for bypass in the future. We hope to have a comprehensive view of this issue by late this year before we take any further action.

Question 17. What should be done to protect universal telephone service for residential users? Rural users? Small business users?

Answer. The Commission has established a Universal Service Fund to subsidize those users whose costs are above average. The subsidy will be paid by interexchange carriers but it will be much smaller than the current subsidy since it will be targeted to only those who need it. Small business users will also be aided by reductions in long distance service prices in the years just ahead.

Question 18. Should the newly formed seven Bell Regional Holding Companies be allowed to offer long distance telephone service?

Answer. I'm willing to consider that issue at the appropriate time and I really have no position on it as a long-term proposition. It seems to me that the Commission has enough on its plate for the immediate future without getting into that issue. As things take shape in the weeks and months ahead, it might be that the holding companies can enter the long distance business in some form without raising undue cross subsidy concerns. If that can be demonstrated, I would certainly be willing to consider their entry.

Question 19. Do you believe the long distance telephone market is effectively competitive?

Answer. Yes. There are no barriers to entry that I can discern. AT&T cannot price its services without regard for existing or potential competition. There are areas of the country where AT&T remains a monopoly provider of long distance services but only because other carriers do not choose to serve those areas. If the definition of "effectively competitive" is that competitors can enter the market at will and that the major carrier is unable to set prices without regard for competitive forces, then I believe the market is effectively competitive.

Question 20. What can be done to promote competition in international telecommunications services and facilities?

Answer. There are a number of applications before the Commission seeking to provide competitive entry into international communications services. The Commission has encouraged competitive entry into international record and voice services by breaking down the barriers which once confined certain carriers to record-only services and AT&T to voice services. We have required a balancing of satellite and cable services to provide choices for consumers. We are continuing to examine opportunities for competition in international services as are the legislative and executive branches of the government. Because competitive entry is not always welcomed by some foreign governments, we are proceeding carefully.

SEPARATE STATEMENT OF COMMISSIONER JAMES H. QUELLO

Re section 73.1910 of the Commission's rules and regulations concerning the general fairness doctrine obligations of broadcast licensees, General Docket No. 84-282.

It is no secret that I have long advocated full First Amendment rights for the electronic media. I strongly endorse the thrust of this document which has many well-reasoned arguments and which should provoke thoughtful comments. This Commission has an obligation to continually reexplore—for both its own benefit and for the benefit of Congress—any doctrine that precludes full exercise of journalistic rights by the electronic media. I think this is an extremely important initiative that the Commission has undertaken.

I would like to add that I shall be very interested in reviewing the comments concerning the Commission's statutory authority to revise the fairness doctrine. The Commission has long acquiesced in the view that the 1959 amendments to the Com-

munications Act did effect a codification of the doctrine, and I believe that the burden of proof rests on those who seek to change this status quo. I trust that this issue will be addressed at length in the comments, and I look forward to examining the views of legal scholars on this issue.

[Whereupon, at 9:55 a.m., the hearing was adjourned.]

